HOSPITAL ABSTRACTS

A MONTHLY SURVEY OF WORLD LITERATURE

PREPARED BY THE DEPARTMENT OF HEALTH

AND SOCIAL SECURITY

VOLUME 17, NO. 3, ABSTRACTS 303-454. MARCH 1977

LONDON: HER MAJESTY'S STATIONERY OFFICE

£1 net

Hospital Abstracts aims to cover the whole field of hospitals and their administration, with the exception of strictly medical and related professional matters. The abstracts purport to be fair summaries of the original papers; no responsibility can be accepted by the Department of Health and Social Security for the statements or opinions expressed in them.

Copies of publications and reprints of articles, for early notice in **Hospital Abstracts**, are invited. They should be addressed to: The Librarian, Department of Health and Social Security, Alexander Fleming House, Elephant and Castle, London, SE1 6BY, (01-407 5522, ext. 6954 or 6025) to whom also correspondence relating to the contents of the journal should be sent.

Hospital Abstracts is published monthly by Her Majesty's Stationery Office and is obtainable directly from the addresses shown on cover page iv, price £1 (£1.11 by post). Annual subscription £13.32 including postage. Subscriptions and orders by post should be addressed to Her Majesty's Stationery Office, P.O. Box 569, London, SE1 9NH.

PHOTOCOPYING SERVICE

Single copies of papers summarized in **Hospital Abstracts** can usually be supplied. This service is free to British hospital authorities but a charge of 5p a page is made to other subscribers. Requests must be made on the official form, copies of which (with details of the photocopying service) can be obtained from: The Librarian, Department of Health and Social Security, Alexander Fleming House, Elephant and Castle, London SE1 6BY.

HOSPITAL ABSTRACTS

A MONTHLY SURVEY OF WORLD LITERATURE

PREPARED BY THE DEPARTMENT OF HEALTH

AND SOCIAL SECURITY

VOLUME 17, NO. 3, ABSTRACTS 303-454. MARCH 1977

LONDON: HER MAJESTY'S STATIONERY OFFICE

© *Crown copyright 1977*

First published 1977

ISBN 0 11 722613 0

CONTENTS

	page
Hospitals in general	121
Hospitals in Great Britain	121
Hospitals in other countries	122
Planning, design and construction	123
Determining size of hospital and bed needs	123
Selection of site	123
Building: tendering, etc.	123
Hospital design	124
Design of individual general hospitals	124
Design of special departments	124
Design of special hospitals or units	125
Wards and patients' rooms	126
Other aspects: evaluation of buildings	126
Engineering services	127
Installations in general	127
Communication systems	128
Transport in general	128
Maintenance of buildings and equipment	129
Sanitary equipment and fittings	129
Equipment, fittings, furniture	130
Interior decoration	130
Medical equipment	131
Trolleys, stretchers, etc.	131
Staff generally	131
Recruitment	131
Conditions of service	131
Salaries and superannuation	131
Staff management	132
Staff training	132
Staff welfare	133
Special classes of staff	133
Administrative and clerical staff	133
Medical staff	134
Nursing staff	135
Other professional and technical staff	140
Ancillary staff	140
Organization and administration	141
Economics of hospital management	142
Running costs	142
Bed occupancy, economic use of beds	143
Data processing	144
Organization and methods, work study	145
Medical records	146
Hospital statistics	147
Legal aspects of hospital administration	147
Finance and accounting	148
Finance	148
Hospital accounting	149
Supplies and stores	150
Stores	150
Catering, dietetics, kitchens	150
Hospital catering	150
Food service	150
Washing up, cleaning of equipment	151
Laundries and linen service	152
Hospital linen and textiles	152
Hospital domestic management	152
Domestic work	153
Hygiene in the hospital	153
Hospital infections	153
Prevention and control	154
Sterilization	155
Air hygiene	156
Disposal of waste	156
Safety measures	156
Accidents, generally	156
Fires and fire prevention	156
The patient	157
Welfare of the patient	157
Voluntary service, voluntary workers	157
Transport of patients	157
Hospital care	157
Discharge of patients	160
Home care, after-care	161
Special departments	162
Wards	162
Operating suites	162
Anaesthesia	163
Pharmacy	163
Laboratories	166
Diagnostic X-ray department	167
Radioisotope department	167
Rehabilitation	167
Physiotherapy department	168
Departments for special therapy	168
Intensive care units	169
Special hospitals and units	169
Out-patient	169
Casualty and accident	170
Day hospitals	170
Children	170
Geriatrics and long-stay	171
Urology	172
Surgery	172
Maternity	173
Gynaecology	173
Psychiatry	174
Social medicine	179
Author index	v
Addresses of publications	vi

HOSPITAL ABSTRACTS
Vol. 17 March, 1977 No. 3

HOSPITALS IN GENERAL

303. BLANPAIN, J. E. **Characteristics of the modern health service and hospital: a challenge for information systems.** *Acta Hospitalia*, Leuven, 1976, vol. 16, no. 3, pp. 183-190.

Health services have witnessed unprecedented growth and development in all countries during the past three decades. The range of services has become diversified and is being offered through a variety of outlets. The development of services has been the result of increasing medical knowledge, advances in technology and the amount of money reserved for health services by social policies. The services now require more money, more equipment and more manpower to support them as a result of these policies and advances. A credibility gap is developing since it is now realized that the care and services given are not always appropriate or effective and may even be the cause of certain illnesses. The cost-effectiveness gap and the imbalance between demand and supply are discussed. Medical care can be considered as a continuum along several dimensions which can be illustrated by information systems: nature of the problem; perception of the problem by the patient; potential consequences of the problem for survival; method of approach to the problem; level of skill used; organizational setting; and time frame. Systems analysis and social engineering within a context of participative democracy are being looked upon as the tools to cope with the overall problem of modern health care. Advances in these methodologies call for substantial and sophisticated information systems which will hopefully result in better balanced health services, close the expectancy gap and contain the rising costs.

304. RUSSELL, L. B. **The diffusion of new hospital technologies in the United States.** *International Journal of Health Services*, Farmingdale. N.Y., 1976, vol. 6, no. 4, pp. 557-580.

Increases in the real resources used in hospital care have been an important cause behind rising hospital costs in the United States. Many of these resources have taken the form of new hospital technologies, and this paper begins by reviewing the trends in adoption of new technologies over the years 1950 to 1974. The resource requirements, costs and, as far as possible, the patient benefits of two of these technologies are then discussed in more detail: intensive care, a widespread facility with many variations, has been a major contributor to hospitals' costs; radiotherapy has been characterized by a succession of competing technologies. Regulatory efforts, such as certificate of need reviews, would be more effective if they viewed hospitals as flexible collections of such technologies (with the costs and patient benefits of each weighed separately) rather than primarily in terms of number of beds. A national centre to collect information on the separate technological functions of hospitals and make it available to interested groups would make a useful contribution to hospital regulation.

HOSPITALS IN GREAT BRITAIN

305. KERNICK, D. P. and DAVIES, S. E. **The community hospital: a three-year study,** *British Medical Journal*, London, 1976, Nov. 20, vol. ii, pp. 1243-1245.

Barry Community Hospital, South Glamorgan, discharged 2,086 patients in a

three-year period; the mean length of stay was 14.8 days. Currently 13 general practitioners share the 40 beds, which are allocated on an informal basis and co-ordinated by the senior nursing officer. Some 68 per cent of the patients treated were over 65 years of age and 8.9 per cent died in hospital. While the most common diagnosis on admission was disease of the respiratory tract this does not indicate the actual cause of admission. A study of 142 patients from one practice indicated acute illness in 44 per cent of the cases, assessment in 20 per cent and a need for hospital care in 36 per cent. Comparisons are made between Barry and seven other general practitioner hospitals. By adhering to a three-week limit for length of stay it has been possible to stop the hospital developing into a long-stay geriatric unit. The major problems in using a community hospital and correctly allocating patients are outlined.

306. NUNN, C. **Monklands DGH: a case study in devolution.** *Hospital and Health Services Review*, London, 1976, Dec., vol. 72, no. 12, pp. 416-420.

Monklands District General Hospital, Lanarkshire, derives its uniqueness from the fact that it has been built in a location where no general hospital existed before with the result that there is no existing nucleus of staff to transfer to it. A commissioning team was set up from scratch to identify the areas where definition of needs was required. Selection and purchase of equipment is discussed. The physical features of the location of the hospital, and functional content are described. The project has been affected by recurrent economic problems, standards have had to be pruned and cost cutting exercises amounting to £770,000 at PCL stage and £500,000 at FCL stage carried out. The hospital is planned to provide all acute hospital services other than specialist maternity for the Monklands and Cumbernauld Health District. At present over 11,000 patients from the district are admitted to Glasgow hospitals each year and 4,300 to hospitals in other Lanarkshire districts.

HOSPITALS IN OTHER COUNTRIES

307. MULLINK, J. A. M. Hoe ziek is het ziekenhuis? **[How sick is the hospital?]** *Ziekenhuis*, Utrecht, 1976, Nov. 3, vol. 6, no. 21, pp. 564-569.

The author sets out to find the cause of dissatisfaction with the functioning of the health service in the Netherlands. He divides the structure into: (i) direct health care; (ii) hospital treatment; and (iii) after-care. He examines the number of beds per 1,000 inhabitants for various hospitals, the number of people employed in various sections of the health service, costs in relation to national income, increasing demand, and claims for damages. It was found that most criticism is directed against the general hospitals. These are having to cope with rises in costs due to wage increases, shorter working hours, increased taxation, higher costs and standards of training, and rises in volume due to increasing referral of patients to hospitals and demands for higher standards. Dissatisfaction is expressed in higher expectations and criticism of costs and mistakes. Suggestions for improvement are: (i) introduction of district health centres and closer integration of hospitals with other health services; (ii) more co-operation with after-care establishments; (iii) more emphasis on the human attitudes of staff to patients, organization and cost efficiency with systematic checks, and stricter control on medicine and quality of service; and (iv) more co-ordination of hospitals within a region.

308. PAINE, L. **Hospital study tour in Denmark.** *World Hospitals*, London, 1976, vol. 12, no. 4, pp. 210-224.

The 14th International Hospital Federation Study Tour of hospitals and health services took place in Denmark in 1976. The background to the hospital and health care services provided in Denmark is outlined. The selected hospitals visited on the tour, providing general medical, psychiatric, and geriatric care, are discussed, and their special features outlined. Services for the mentally handicapped and for rehabilitation, their functions and characteristics are also outlined.

PLANNING, DESIGN AND CONSTRUCTION

See Abstract No. 394

DETERMINING SIZE OF HOSPITAL AND BED NEEDS

See Abstract No. 448

SELECTION OF SITE

309. BERLIN, G. N., REVELLE, C. S. and ELZINGA, D. J. **Determining ambulance-hospital locations for on-scene and hospital services.** *Environment and Planning*, London, 1976, Aug., vol. 8, no. 5, pp. 553-561.

Methods of minimizing costs or obtaining maximum use of a service are frequently criteria for problems of siting organizations and buildings. Network models, incorporating several new impedance measures, are introduced. The models are based on a concern for improving the delivery of emergency medical care. Models for the siting of hospitals and ambulance depots are constructed for three different measures of travelling time: the response time of the ambulance from the depot to the emergency; the combined-trip time from the depot to the hospital; and the round trip time from the depot to the scene of the emergency, to the hospital, and then back to the originating depot. Four formulations are compared: The location models have been constructed without actually obtaining a solution since the models are amenable to solution via several algorithms that have been advanced for the *p*-median problem. They provide a framework for the study of problems involving the location of emergency facilities and introduce the notions of two- and three-part service steps in facility siting. The two-part service focuses on patient needs, whereas the three-part service emphasizes efficiency of vehicle use.

BUILDING: TENDERING, ETC.

310. DEESON, A. F. L. Il progetto "turnkey": una concezione moderna per le construzioni ospedaliere. **[The turnkey project: a modern concept in hospital construction.]** *Ospedale*, Torino, 1976, Oct., vol. 29, no. 10, pp. 278-282.

The author describes the work of six British firms which have been responsible for 'turnkey' hospital projects and variations on this theme in many parts of the world. These include G. D. Searle and Co. who design, construct, and furnish whole hospitals,

train local staff, and hand over the hospital ready for use; the Medical Supply Association's mobile hospitals; and the Wellcome modular surgical unit.

HOSPITAL DESIGN

See Abstract No. 328

DESIGN OF INDIVIDUAL GENERAL HOSPITALS

See also Abstract No. 306

311. 'Komplett sjukhus' präglat av nytänkande finns i Värnamo. **[The 'complete hospital'—is the impression given by fresh thinking in Värnamo.]** *Landstingens Tidskrift*, Stockholm, 1976, Oct., vol. 63, no. 12, pp. 25-27, 30.

The new hospital in Värnamo (architects: F. Löfström and S. Krus) is described as the first 'complete hospital' in Sweden because in addition to therapeutic and convalescent departments for the sick, there are running tracks, parks and a swimming pool for the general public—'you go up to the hospital so as not to have to go to hospital'. The number of in-patients is estimated to be 9,000 a year, giving a total of 152,000 ward days a year, plus 128,000 out-patient consultations; there is a staff of 900. The department of rehabilitation has a small area outside with paths, steps, kerbs, railings and pedestrian-operated traffic lights for retraining patients in town traffic situations. The hospital is built of site-cast concrete, externally heat-insulated with light-weight sheeting. The technical equipment, heating and ventilation plant, power (5 transformer stations), 12,000 lights, 1,350 telephones, fully automated five kg. box transport system and 27 lifts are centrally controlled by an automatic apparatus with 2,000 functions. There are six external and seven internal photographs, and a cut-away diagram of the transport system.

312. **Tygerberg, a milestone in history.** *Medical Equipment News*, Johannesburg, 1976, Sept./Oct., pp. i, iii, v, vii, ix, xi, xv, xvii, xix, xxii.

These six papers describe the planning and development, design, facilities and equipment of this new teaching hospital for the University of Stellenbosch, South Africa. It has 60 ward units with a total of 1,491 beds, plus 60 cots for smaller children in the paediatrics department and 168 for babies in the maternity unit. Standard ward units contain four six-bed rooms, six single rooms and two single rooms for security and admission purposes. Other facilities include 24 operating theatres and four special investigation theatres, an out-patient department occupying five floors and capable of handling 3,000 out-patients a day. Nine photographs but no plans are included.

DESIGN OF SPECIAL DEPARTMENTS

313. Zost, E. D. **Designing a modern hospital pharmacy.** *Hospital Pharmacy*, Philadelphia, 1976, Oct., vol. 11, no. 10, pp. 430-432.

Historically areas provided within hospitals for the pharmacist have been poorly designed with space and layout inadequate. The administrator and pharmacist agreed that a large modern pharmacy was an essential feature in the planning of the new

Metropolitan General Hospital and a list of pharmacy services to be provided was compiled including: (i) total unit dose drug distribution; (ii) unit dose packaging; (iii) pharmacy-based intravenous solution admixture and sterile products service; (iv) drug information library; (v) purchasing and inventory control; (vi) departmental administration; (vii) narcotic and barbiturate control; and (viii) out-patient dispensing. The space allocated on the initial plan for the hospital was only 600 square feet, which was inadequate for the services required. An extra area was allocated to the pharmacy making a total of 1,500 square feet. The extra space was allocated for: an office; bulk storage with rolling shelves; an intravenous admixture/sterile products laboratory with laminar flow hood capabilities; receiving/purchasing inventory control area; and drug information library. It is recommended that hospital planners and architects seek information from the pharmacist before making structural commitments which might impede a good pharmaceutical service. Plans of the original and final design are included.

314. RENTSCH, I. MÜLLER, P. and GÄRTNER, U. Planung, Einrichtung und instrumentelle Ausstattung der gastroenterologischen Endoskopieabteilung im Städtischen Krankenhaus Bremen. **[Planning, equipment and instrumentation for the gastroenterology endoscopy unit, Bremen City Hospital.]** *Krankenhaus*, Stuttgart, 1976, Nov., vol. 68, no. 11, pp. 381-383.

The department of gastro-enterological endoscopy of the new 1,724-bed hospital in East Bremen, which will serve a population of 100,000 and is now under construction, is described. The planning of the department has been based on the performance of well over 1,000 endoscopies (excluding laparoscopy and rectoscopy) a year. There are four endoscopy rooms, two electrocardiography rooms, a sonography room, facilities for combined endoscopy/radiological examinations, photocopying and documentation rooms, waiting rooms, etc. Each endoscopy room has its own facilities for the cleaning and storage of instruments. The paper includes a sketch floor plan, a list of the endoscopy examinations carried out, and a list of the instruments used.

DESIGN OF SPECIAL HOSPITALS OR UNITS

See also Abstract Nos. 434 (Geriatrics and long-stay), 440, 446, 447 (Psychiatry)

315. KOHN, J. **Hospice building speaks on many emotional levels to patient, family.** *Modern Healthcare*, Chicago, 1976, Oct., vol. 6, no. 4, pp. 56-57.

New Haven (Conn.) Hospice for the care of terminal cancer patients has commissioned a new 44-bed hospice on a 5.9 acre site in Branford (Conn.). The architect has designed the building to fit into the residential community. There are two V-shaped patient care wards each accommodating 22 beds. The drive to the hospital is extra long and is lined with trees, shrubs and terraced gardens. Visible from the street is a glass-walled, greenhouse corridor that runs the entire length of the building, and the staff dining room. The essence of the building is its interior space. Along one arm of each V-shaped wing there are three four-bed wards, and along the other are two four-bed wards and two single rooms. At the points of each V are triangular-shaped living rooms. All 44 beds look out into the greenhouse corridor, and the patients can see and hear

the activity going on. Privacy is provided by curtains. The majority of patients require people around them as privacy represents isolation and abandonment for them. The common-room is the core of the building and acts as a foyer to the chapel. A viewing room, a special retreat room and a series of anterooms have been provided as transition spaces to relieve anxiety in visitors and staff.

316. Psychogeriatrisch centrum Stadzicht te Rotterdam. **[Stadzicht Psychogeriatric Centre, Rotterdam.]** *Technische Gids voor Ziekenhuis en Instelling*, Amsterdam, 1976, Oct. 26, vol. 45, no. 1113, pp. 626-629.

The new centre (architects: Ir. H. Nefkens, Rotterdam) provides nine 30-bed nursing units, day treatment facilities for 30 patients and a psycho-geriatric polyclinic. Each nursing unit comprises four five-bed, one four-bed, one three-bed, and two single rooms, an isolation room, large sitting-room, dining-room, service kitchen and consulting room. Furniture, mostly of synthetic materials, has rounded edges, tables are designed to accommodate wheel-chairs and there are support rails along corridor walls. The nursing units have an electric door-locking system whereby a door can be unlocked by pressing a code number on a panel near the door. Patients' rooms are equipped with listening devices which light up an alarm signal at the nurses' station and over the room doors when sounds exceed a certain level. The building has a mechanical ventilation system, four passenger lifts and two food lifts. Floors are covered with linoleum and vinyl, corridor walls are in brick, stairs in natural stone. A staff of 270 includes a substantial number of student nurses. The paper includes a site plan, a floor plan of two nursing units and five photographs.

317. Psycho-geriatrisch verpleeghuis 'Bruggerbosch' te Enschede. **[Bruggerbosch, psycho-geriatric nursing home, Enschede.]** *Technische Gids voor Ziekenhuis en Instelling*, Amsterdam, 1976, Nov. 9, vol. 45, no. 1114, pp. 679, 681.

The nursing home, originally a general main building with two pavilions each for 75 patients, has been expanded by 75 beds housed in three pavilions of 25 beds each, new departments for physiotherapy and occupational therapy, and a boiler house (architects: Niesten-Abel-Eisma-Jongema, Leeuwarden). Day activities and bedrooms are strictly separated and existing walking corridors have been extended to the new buildings, forming circuits for patients to walk round. Technical descriptions are given of the building materials and working methods used for the foundations, basic construction, outer walls, roofing, inner walls, floors, ceilings, glazing and woodwork. The paper includes a plan of the layout of the buildings and three photographs.

WARDS AND PATIENTS' ROOMS

See Abstract Nos. 318, 319, 326

OTHER ASPECTS: EVALUATION OF BUILDINGS

318. SEARS, D. and AULD, R. **Evaluation of complex buildings: final report. Supplement I. Hospital survey: the attitudes of patients, doctors and nurses to aspects of the physical environment in hospital wards.** London, Joint Unit for Planning Research, 1976, ii, 14pp.

This paper presents some of the conclusions drawn from an attitude survey carried

out in 34 hospital wards [see Abstract 319]. The conclusions provide information for administrators and planners about the attitudes of people who use hospital wards, and should help them to assess the suitability of existing wards from the users' point of view.

319. SEARS, D. and AULD, R. **Human valuation of complex environments: a final report on the Evaluation of Complex Buildings Project prepared for the Leverhulme Trust Fund.** London, Joint Unit for Planning Research, 1976, xii, 153pp.

This study is an attempt to develop a structure for the relationships between the physical characteristics of an environment and people's subjective valuations of it. Hospital wards were chosen for the study because the authors had previous experience in the hospital planning field and because they accommodate a variety of users, having different patterns of activity, all within a fairly small scale spatial environment. The report covers: introduction to the valuation of buildings; elements of design; behavioural analysis for value; theoretical analysis; illustrative empirical study based on a questionnaire survey of patients, medical staff, qualified nurses and unqualified nurses in 34 wards at 16 hospitals in five regions; and conclusions and implications for further research. In addition to many tables and diagrams, the report has a list of 174 references to the literature.

ENGINEERING SERVICES

INSTALLATIONS IN GENERAL

320. HIERGIST, A. Technik im Krankenhaus. **[Technology in the hospital.]** *Krankenhaus Umschau*, Kulmbach, 1976, Dec., vol. 45, no. 12, pp. 887-895.

Since up to 30 per cent of the running costs of hospitals (or even up to 60 per cent where there is full air-conditioning) goes on technical services it is of paramount importance that these should be properly planned, suited to the activities of the hospital, and efficiently used. The author has studied a total of 100 West German hospitals and he here sets out his conclusions on technical service requirements. Among the services dealt with are the following: heating, waste disposal, ventilation and air-conditioning, electrical and electronic installations, sanitary plant, water supply, transport installations, and supply services.

321. PHILPOT, B. **Total energy at Leeds hospital.** Slough, Combustion Engineering Association, 1976, 14pp.

This paper describes the total energy system at the new General Infirmary and Medical and Dental Schools at Leeds. In addition to the total energy plant, the generation station complex houses medical and general purpose compressed air plants, two large incinerators, central oxygen store, works department, engineering offices and laundry. Because of the restricted nature of the site, the design is inevitably compact and one part of the building rises to four floors surmounted by a plant room. Brief details are given of noise control, fuel (natural gas and diesel oil), engine generators, boilers, refrigeration, standby philosophy, cooling towers, incinerators, chimneys, compressed air plant, laundry, generators, high voltage switchgear, station services, instrumentation, control room, services distribution and costs.

322. BLAIVE, M. P. and DELINIÈRE, M. La surveillance des installations techniques et la sécurité dans l'hôpital d'aujourd'hui : le contrôle centralisé du groupe hospitalier de la Timone à Marseille. **[Control of technical equipment and modern hospital security: centralized control in the Timone Hospital Group, Marseille.]** *Techniques Hospitalières*, Le Kremlin-Bicêtre, 1976, Nov., vol. 32, no. 374, pp. 77-88.

A detailed description is given of the central control unit for all the technical installations at the Timone Hospital site in Marseilles, where there is a 1,500-bed hospital as well as the faculties of medicine and pharmacy, a psychiatric unit, a school of nursing, etc. The control unit, similar to those used in power stations and industrial complexes, monitors gas and fire alarms as well as breakdowns in the plumbing, air-conditioning, and electrical systems, the lifts, pipes carrying gases for medical purposes, and the pneumatic tube system for transmission of messages. When a fault occurs a flashing light appears on the control panel and a buzzer sounds. The control unit is manned 24 hours a day and an engineer with a staff of 94 men can rectify most breakdowns almost as soon as they occur. The control room also houses the central computerized control unit for the heating system, and the piped music unit. The system has worked well since its installation in 1974.

323. COORENS, J. M. Nieuwe Spittaal to Zutphen ziet balans doorslaan ten gunste van Total Energy. **[New Hospital, Zutphen, approves use of total energy.]** *Technische Gids voor Ziekenhuis en Instelling*, Amsterdam, 1976, Nov. 9, vol. 45, no. 1114, pp. 672-673.

The running costs of the total energy installation at this hospital, based on data from 1975, have been worked out and compared with those of a conventional supply. Detailed figures are given of the investment costs of the installation, the estimated investment costs of a conventional installation, annual cost of interest and repayments, fixed cost proportion of price per kilowatt hour, variable costs, total running costs and productiveness. The installation of total energy was economically justified, particularly in view of the developing scarcity of energy.

$$\text{The efficiency of total energy} = \frac{\text{produced kWh} + \text{residual heat}}{\text{consumed gas}} = 70.3 \text{ per cent.}$$

This figure is low because of under-capacity loading and could be raised to approximately 75 per cent. In addition, the use of residual heat prevents pollution from cooling-water, and exhaust fumes are discharged at lower temperature levels.

COMMUNICATION SYSTEMS

See Abstract No. 408

TRANSPORT IN GENERAL

324. ELLRICH, M. Die Materialflussuntersuchung als Grundlage für wirtschaftliche Transportsysteme im Krankenhaus. **[A study of the flow of supplies as the basis for an economic hospital transport system.]** *Krankenhaus Umschau*, Kulmbach, 1976, Dec., vol. 45, no. 12, pp. 895-899.

When modernization or extension of a hospital is being planned decisions have to be made on the transport system to be used to provide the most efficient service. In order

to do this a study of the flow of materials is essential, irrespective of whether an automatic system is to be installed or not. Such a study will throw up any weak points in the existing system which can often be put right by quite simple measures. This paper describes how an investigation into materials flow should be carried out, including the assembly of data on types of goods transported, method of transport, grades of staff involved and time taken in transport. Examples are given of some weak points which the study could bring out.

MAINTENANCE OF BUILDINGS AND EQUIPMENT

325. COLEBROOK COOLING, W. **A practical approach to low cost maintenance management.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 158, 160, 162, 164, 166, 168, 172.

A method is presented of inserting work discipline into maintenance management in small organizations through alert, active supervision. The system provides data to locate high maintenance cost areas. A flow chart of the entire system is presented. The various steps involved in establishing the system are: (i) collection of time and work information; (ii) distribution of maintenance costs; (iii) historical record files; (iv) the work order; (v) scheduling and job assignment; and (vi) material changes. The advantages of the system are: (i) it is installed step by step without any disruptions of any kind and with improvements at each step; (ii) no capital expenditure is required and the cost of the forms is negligible; (iii) maintenance management will be working on causes rather than effects when the system is fully installed; and (iv) the system will pay for itself through improved work discipline and proper use of control data that at present are not available.

SANITARY EQUIPMENT AND FITTINGS

326. ERIKSEN, K. R., KROGNOS, G. and MADSEN, M. Indretning af skyllerum på sengeafsnit. **[Planning a ward sluice room.]** *Sygeplejersken*, København, 1976 Nov. 3, vol. 76, no. 43, pp. 4-9.

In recent years wards have been built without sluice rooms, the utensils being transported to central cleaning or destruction facilities. This is an unfortunate development from the point of view of hygiene. In 1962 a design was proposed [see *Hospital Abstracts*, Vol. 3, Abstract 736] for a closed unit, with a double-ended utensil-boiler and two double-sided cupboards: one opening to the corridor, for specimen bottles to be placed in from outside, and one opening into the ante-room next door, for clean bedpans. Modifications to this design, based on the intervening years' advances, the development of decontaminators and waste disposal units and the invention of Clinistix for many former laboratory tests, involve the following plan, which dispenses with the double-ended boiler. The sluice should be equipped with a fully-automatic bedpan-rinser needing the minimum of manual contact. On one side there should be a stand for unwashed urine bedpans, and on the other the original double-sided cupboard for clean utensils, for removal in the ante-room. There should be a fume cupboard, stainless steel working surfaces, a wash-hand basin, and a decontaminator meeting Swedish standards demanding final disinfection at a minimum of 85°F for at least

90 seconds. The washing-up machine should also operate to this standard. The decontaminator is emptied by staff in the clean depot, which replaces the old boiling-room. Sterile utensils are finally removed from the ante-room as required. The paper is illustrated by plans of sluices built to the old and new recommendations, and seven photographs of details of arrangements.

327. STOLENS, G. Einleitung von Krankenhausabwasser in die Kanalisation: Anmerkungen zum Merkblatt des Bundes-Gesundheitsamtes von 1975. **[Disposal of hospital sewage in the public sewerage system: comments on the Federal Health Office leaflet of 1975.]** *Krankenhaus*, Stuttgart, 1976, Nov., vol. 68, no. 11, pp. 388-391.

This paper discusses the West German Federal Health Office's publication 'The discharge of hospital sewage into the main sewerage system' (1975). It summarizes the recommendations as follows: the faeces of small numbers (up to 10) of germ carriers can be disinfected individually before discharge into the sewage system; the faeces from larger wards, and when patients are admitted from a wide catchment area, should be disinfected at a central installation before being discharged; hospital sewage is usually less contaminated than that from domestic sources; and sewage from infectious diseases wards is usually less contaminated than normal sewage provided that causative organisms have been killed. There is some doubt about the legal position on the discharge of hospital sewage but each hospital is responsible for carrying out appropriate measures.

EQUIPMENT, FITTINGS, FURNITURE

INTERIOR DECORATION

328. LILJEDAHL, A. Bra miljö gör att personalen trivs—därmed blir patient-kontakten god. **[A congenial environment is beneficial to the staff—thereby improving patient contact.]** *Landstingens Tidskrift*, Stockholm, 1976, Oct., vol. 63, no. 12, pp. 31-33.

Patients do not remember their surroundings when they leave hospital—they remember positive or negative impressions of their contact with the staff. But it is wrong to conclude that the interior environment is irrelevant—it affects attitudes and thus the way staff act and are judged by patients. A working party was set up to design the internal environment at Värnamo Hospital at the planning stage on the basis of the function of each room, its position in relation to other rooms, and general hygienic standards. Among other things the team designed a standard cupboard with laminated plastic doors for installation throughout the hospital. The use of plastics was otherwise avoided: walls have painted textiles glued to them. The hospital is divided into three groups for colour application: (i) areas where people are stationary for longer periods (offices, wards, etc.) are neutral in colour, with light grey or white walls; (ii) areas where people are stationary for shorter periods (day-rooms, waiting-rooms, etc.) have coloured furniture, curtains, etc. and white walls; and (iii) corridors etc., which are in varied, bright colours. The central hall is decorated in natural materials such as stone and pine, and contains a large glass sculpture. The staff canteen has a high round wall

decorated in concrete reliefs, and the lecture hall, which can also act as a theatre, is acoustically designed and painted purple. A consistent line has been maintained throughout all stages of construction. The paper is illustrated with four interior photographs.

MEDICAL EQUIPMENT

See Abstract No. 423

TROLLEYS, STRETCHERS, ETC.

329. BRITISH STANDARDS INSTITUTION. **Specification for patient trolleys.** (BS 5402:1976) London, B.S.I., 1976, 8pp.

This British Standard specifies materials, dimensions and constructional and electrical safety requirements for patient trolleys, which may be supplied in four basic forms: (i) with fixed top; (ii) with tilting top; (iii) without top—for stretcher carrying; and (iv) with sliding top—for patient transfer. Drawings of each form and of attachments for medical gas cylinders, etc. are included.

STAFF GENERALLY

RECRUITMENT

See Abstract Nos. 341, 342, 346, 354

CONDITIONS OF SERVICE

See Abstract No. 343

SALARIES AND SUPERANNUATION

330. FUCHS, V. R. **The earnings of allied health personnel—are health workers underpaid?** *Explorations in Economic Research*, New York, 1976, vol. 3, no. 3, pp. 408-432.

Earnings and changes in earnings of allied health staff (defined as wage and salary earners with less than 18 years of schooling) in the United States are measured on the basis of the 1/100 public use samples of the 1960 and 1970 Censuses of Population. Comparison with all non-farm workers standardized for colour, sex, age and schooling revealed that earnings in health were 95 per cent of the all-industry norm in 1969, compared with 86 per cent in 1959. Approximately 80 per cent of the hours are worked by women. There are substantially higher earnings in hospitals especially for women than in other areas of the health industry. The economic changes in salary between 1959 and 1969 are discussed. The increases in relative wages for health workers in the

1960s were greater in hospitals than other health settings and particularly high for registered nurses and practical nurses. Regional differences in hospital wages are highly correlated with wage differentials for all non-farm workers, but during the 1960s the wage gains in hospitals outpaced those in the rest of the nation.

STAFF MANAGEMENT

See also Abstract Nos. 341, 344, 345

331. CAREY, R. G., JOHNSON, H. and KERMAN, F. **Improvement in employee morale linked to variety of agents.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 85-87, 90.

A survey in a metropolitan Chicago acute general hospital related factors affecting job satisfaction to education levels. The important job satisfaction items were: (i) for eighth grade graduates—the feeling of working effectively, having a chance to use their skills, receiving adequate salary, being consulted about their opinions and treated without unfair criticism by superiors, and getting assistance when needed from co-workers; (ii) for high school graduates—growth, good procedures for conflict resolution, chance to use their skills, being consulted about opinions, and the need to feel they have accomplished something; and (iii) for college graduates—a more active role in exercising power through actual decision making, in influencing decisions and having authority delegated to them, being loved, respected and accepted by others, and receiving assistance from co-workers. The implications of these findings for staff management are discussed.

332. MARTIN, S. Les pouvoirs parallèles. **[Parallel powers.]** *Gestions Hospitalières*, Mantes, 1976, Oct., no. 159, pp. 777-781.

The power structure in French hospitals is hierarchical. Persons or groups of persons whose position in the pyramid is low will seek other ways of exercising power if they feel that they cannot make their voices heard legitimately, and a spirit of collective resistance may develop among the staff. This can be avoided if the hospital director engages in genuine consultation with his staff at all levels and if he provides them with sufficient information for them to be able to understand the reasons which underlie his decisions. The author illustrates her thesis with concrete examples relating to nursing staff.

STAFF TRAINING

See also Abstract Nos. 335, 346-349, 354, 386, 441

333. FORD, C. W. and MORGAN, M. K., editors. **Teaching in the health professions.** St. Louis, Mosby, 1976, xiv, 289pp. £7.75

Substantial changes in the health care delivery system have led to a rapid increase in the demand for allied health workers and for new types of health profession; at the same time the training of the more traditional health occupations has moved from the hospital to colleges. There has, however, been no adequate base of practical experience

with new learning/teaching techniques and new kinds of academic and clinical arrangements. This book seeks to remedy this situation by bringing together practical information to serve as a curriculum, teaching, and planning guide and reference. The papers are arranged in four parts: (i) establishing competencies; (ii) identifying student characteristics; (iii) facilitating learning; and (iv) improving assessment.

STAFF WELFARE

See also Abstract Nos. 409, 438

334. PASSONI, M. La patologia da lavoro nell'ambiente ospedaliero: ambiente e rischio. **[Occupational disease in the hospital: environment and risks.]** *Ospedale*, Torino, 1976, Oct., vol. 29, no. 10, pp. 270-277.

This paper is concerned with the incidence of illness due to drugs and anaesthetics among hospital staff. It describes the clinical signs, diagnosis, and treatment of allergic reactions, in particular that of dermatitis, and lists the main groups of responsible drugs—antibiotics, sulphonamides, antiseptics, etc. The well-known dangers to theatre staff of high levels of anaesthetic gases in the theatre atmosphere are described. The maximum tolerable levels of chloroform, ether, and trichlorethylene are given; no limits have yet been established for halothane and other anaesthetics. Possible preventive measures include periodic chemical analysis of the blood of theatre staff, staff rotas, the exclusion of women from the theatre during pregnancy, and careful documentation of any pathology discovered among theatre staff.

SPECIAL CLASSES OF STAFF

ADMINISTRATIVE AND CLERICAL STAFF

See also Abstract No. 357

335. PRUVOST, R. Pour une réforme des modalités de formation des directeurs d'hôpitaux. **[Towards reform of the training of hospital directors.]** *Techniques Hospitalières*, Le Kremlin-Bicêtre, 1976, Nov., vol. 32, no. 374, pp. 56-64.

The author suggests changes in the structure and content of the three-year training course for hospital directors run by the National School of Public Health. Since the majority of the students already have at least one university degree but little or no practical experience, he believes that the first year should be divided into a short introductory period of intensive study and a nine-month period of on-the-job training. The second year would include instruction on the health service, hospital legislation, and management techniques, while the third year would be divided into six months of lectures and six months of training in the field, this time preferably not in the hospital but in, for example, the Ministry of Health, regional social security offices, or public or private enterprises. The author explains the reasons for his proposals and discusses their practical implications.

MEDICAL STAFF

See also Abstract No. 398

336. DUCKETT, S. J. and SCARF, C. G., editors. **Doctors in hospitals: organisation and administration.** (Australian Studies in Health Service Administration Nos. 29 and 30) Kensington, N.S.W., University of New South Wales, School of Health Administration, 1976, [vii], 220pp.

In 1974 the Australian Hospitals and Health Services Commission awarded a grant to the Medical Administrative Teaching and Research Advisory Group for a research project on medical staff organization. As the project was nearing completion in 1976, the School of Health Administration and the Australian Institute of Health Administrators decided that their summer school should explore some of the issues raised in the research. This volume presents the proceedings of the school in four sections: (i) patterns of medical staff organization, an introduction to some of the research data and to conclusions concerning the effectiveness of the various medical staff structures; (ii) issues in medical administration, which highlight some perennial problems in the administration of medical services in hospitals; (iii) revision of medical staff organization, including syndicate papers; and (iv) conclusions.

337. HOLLIDAY H. and PLOUVIEZ, M. **Professional independence and clinical freedom: the relations of doctors and remedial therapists.** *Hospital and Health Services Review*, London, 1976, Dec., vol. 72, no. 12, pp. 414-416.

The debate concerning the relative status of physiotherapists, occupational therapists and doctors cannot come to a satisfactory conclusion unless two fundamentally different concepts are isolated from each other, i.e. professional independence and clinical freedom. Professional independence is the legally backed right of an occupational group to establish independently of its employer the limits bounding its area of practice and standards of practice. Clinical freedom is set up by the employing authority to get services of a special kind from those whom it employs in these roles, allowing the use of judgment without it being subject to scrutiny and modification by others. These concepts are discussed within the context of the National Health Service (NHS). The concept of clinical freedom for the medical profession is compared with that for therapists. The consequences of professional independence for occupational therapists and physiotherapists are analysed. The relationship between therapists and clinicians allows clinicians to discharge the responsibilities associated with their clinical freedom while not precluding the therapists from exercising their right as independent professions to ensure that local working conditions allow their members to work in ways that are consistent with their nationally agreed contributions to the health field. The failure to solve the issues may be making it unnecessarily difficult to resolve the problem of relationships within the NHS, but it provides a framework upon which work on the issues can be more realistically undertaken.

338. NICKERSON, R. J. and others. **Doctors who perform operations: a study on in-hospital surgery in four diverse geographic areas.** *New England Journal of Medicine*, Boston, Mass., 1976, Oct. 21, vol. 295, no. 17, pp. 921-926; Oct. 28, vol. 295, no. 18, pp. 982-989.

A study of the volume of operative work performed by all the doctors in hospitals of

four geographic areas in the United States was carried out. Each operation was given a California Relative Value to permit comparisons of work loads between specialties and practices. General practitioners constituted more than a quarter of the doctors who performed operations, but accounted for less than one tenth of the total work. Surgical specialists, performed about 80 per cent of the work, and constituted half the number of doctors. The methods of defining, coding and weighting operations, comparing areas and distribution of doctors are discussed. The specialty categories are outlined, and the operative work of non-surgical specialists discussed. Work loads of surgical specialists varied by certification, specialty, age and practice organization. The results indicate that too many doctors carry out surgical operations and that the work loads of surgical specialists are modest. Calculations involving reallocation of work loads suggest that the total volume could have been handled by a substantially smaller number of busier surgical specialists.

339. POZEN, M. W. and GLOGER, H. **The impact on house officers of educational and administrative interventions in an out-patient department.** *Social Science & Medicine*, Oxford, 1976, Sept./Oct., vol. 10, nos. 9/10, pp. 491-495.

A study of 35 house officers in the medical out-patient clinics of Baltimore City Hospitals aimed to assess the effect on their attitudes about patient care and on their use of clinical information systems of intensive education and administrative support. The house officers were assigned to a clinic with intensive education, with administrative support or with neither. Intensive education involved two faculty members conducting weekly case conferences, reviewing patients seen with regard to clinical findings and management, being immediately available for consultation and providing a critique of all patient records at the end of each clinic. Administrative support involved the assignment of a unit administrator who functioned as a facilitator for the physicians and an advocate for the patients. House officers in the educational clinics rated their education experience significantly higher than those in the control clinics. Those in the administrative clinics rated administrative support moderately higher. Information feedback in the administrative clinics selectively reduced excess prescribing, but did not reduce laboratory use. No differential effect on the house officers' attitudes towards allocation of time to ambulatory care nor on their insight into patients' socio-economic problems were found.

NURSING STAFF

See also Abstract Nos. 332, 400, 438

340. RASPE, H.-H. Probleme des qualifizierten Pflegepersonals im Krankenhaus: eine Analyse der offiziellen Statistik für Akutkrankenhäuser 1965-1974. **[Problems of qualified nursing staff in hospitals: an analysis of official statistics for acute hospitals 1965-1974.]** *Krankenhaus*, Stuttgart, 1976, Nov., vol. 68, no. 11, pp. 376-380.

In striking contrast to the claim three years ago that there was a shortage of at least 30,000 nurses in Western Germany there is now talk of a 'bed mountain' with the implication that nursing complements should be reduced, thus affecting the prospects of student nurses at present in training. To get a picture of what has been happening to nursing over the years 1965 to 1974 a series of tables sets out the statistics for acute

hospitals (student and pupil nurses are not included). These show that while the number of registered nurses has increased over the period by 61.7 per cent, assistant nurses (with one year's training) have increased by 512.4 per cent and unqualified nursing assistants by 86.3 per cent. The number of in-patients increased by 25.4 per cent and patient days by 8.6 per cent, while average length of stay has been reduced from 20 to 17.2 days. The significance of those factors, as of the reduction in working hours from 48 to 40 a week, on nursing to-day and in the future is discussed. Registered nurses devote more time to administrative work and spend less time at the bedside. Shorter length of stay increases and intensifies the work load of the nurse.

341. STRILAEFF, F. **Supervision and turnover of general staff nurses.** *Dimensions in Health Service*, Toronto, 1976, Nov., vol. 53, no. 11, pp. 36-39.

The impact of supervision on nurses' disposition to leave was examined from the perspective of semi-professionals. Three hospital wards, differentiated by high, medium and low turnover rates, revealed differences in attitudes related to the performances of the ward staff. Two hypotheses were tested: (i) the more authoritarian the supervision practised by the ward administration, the lower the general staff nurses' disposition to leave: and (ii) the more authoritarian the supervision practised by ward administration, the lower the professionalization of general staff nurses and the lower their disposition to leave. The hypotheses were not supported by the findings. The general staff nurses indicated that they resented authoritarian supervision. The ideal head nurse grants autonomy but assumes a teaching role when the need is apparent. The emphasis on the need for autonomy indicates that the level of professionalism may be higher than expected. The head nurse has been placed in the role of a superior colleague rather than that of a superior-administrator. This view is at variance with higher professionals who depend upon the supervisor-administrator to run the organization and weakens the nurses' claim to be part of a profession. However this perception may also represent the respect a young associate may have for the more experienced colleague. The findings do not clearly indicate the level of professionalism of general staff nurses.

342. BLOCH, R. G. **The nurses' ombudsman.** *American Journal of Nursing*, New York, 1976, Oct., vol. 76, no. 10, pp. 1631-1633.

Beth Israel Medical Center, New York, with over 1,000 beds and a staff of 800 professional nurses, has a nurse recruitment and retention co-ordinator, who carries out the functions of an ombudsman for the professional staff in retention activities. She is expected to emphasize helpfulness and empathy and encourage staff to seek solutions to problems rather than to seek other employment. The co-ordinator originally worked with new nurses only, but interviews are now scheduled at three months, six months and one year after recruitment and annually thereafter. The interviewing programme quickly showed that problems can be resolved before the point of no return and the inevitable resignation.

343. INTERNATIONAL LABOUR OFFICE. **Employment and conditions of work and life of nursing personnel.** (International Labour Conference, 63rd Session, 1977, Report VI(1)) Geneva, I.L.O., 1976, [iv], 97pp. £3.90

At the 61st Session of the International Labour Conference, a Committee on Nursing was appointed to consider the report on this subject prepared by the Inter-

national Labour Office [see *Hospital Abstracts*, Vol. 16, Abstract 197]. This publication contains: extracts from the report of the Committee; proposed conclusions submitted by the committee; discussion by the conference in plenary session; proposed recommendations concerning employment and conditions of work and life of nursing staff; and proposed resolution concerning the application of certain International Labour Standards to nursing staff.

344. MILLER, H. E., PIERSKALLA, W. P., and RATH, G. J. **Nurse scheduling using mathematical programming.** *Operations Research*, Baltimore, 1976, Sept./Oct., vol. 24, no. 5, pp. 857-870.

This paper formulates the nurse scheduling problem as one of selecting a configuration of nurse schemes that minimize an objective function that balances staffing coverage and the preferences of individual nurses, subject to certain feasibility constraints. The problem is solved by a cyclic co-ordinate descent algorithm. The system was tested on the day shift in an 800-bed hospital: a number of advantages were demonstrated in comparison with the hospital's usual scheduling system.

345. WARNER, D. M. **Scheduling nursing personnel according to nursing preference: a mathematical programming approach.** *Operations Research*, Baltimore, 1976, Sept./Oct., vol. 24, no. 5, pp. 842-856.

This paper describes a nurse scheduling system, the heart of which poses the scheduling decision as a large multiple-choice programming problem whose objective function quantifies the preference of individual nursing staff concerning length of work stretch, rotation patterns, and requests for days off. The constraints provide for minimum numbers of nursing staff to be assigned to each day and shift of a four- or six-week scheduling period. The system consists of a set of policy decisions and an interactive computer scheduler. The problem is solved by a modification of Balintfy and Blackburn's algorithm for multiple-choice programming problems. The implementation of the system in nursing units of several hospitals is described.

346. Onderzoek opleiding en werksituatie verplegenden. **[A study of the training and working conditions of nurses.]** *Ziekenhuis*, Utrecht, 1976, Nov. 17, vol. 6, no. 22, pp. 606-610.

High turnover among nursing staff combined with an average shortage of 10 per cent were the motives for this study. Factors affecting the turnover could be: (i) personal, such as age and sex; (ii) organizational, such as managerial climate, team nursing versus conventional nursing; and (iii) environmental, such as the labour market. Turnover and mobility patterns of individuals, and turnover, absenteeism and stability of qualified staff per hospital were examined. It was found that turnover was greatest in the lower nursing ranks and younger age groups, greater among student nurses in 'in-service' training than among those attending a special training school, and in some 30 per cent of cases due to organizational factors. Reasons for nurses leaving were officially given as training difficulties in both theory and practice, loss of interest, and marriage, though half of a group of student nurses interviewed mentioned a poor working atmosphere. Nurses from a training school often felt disillusioned in the hospital. Most nurses, near or after completion of their general training, were happy in their choice of profession and wanted to specialize. To reduce turnover it is suggested

that nurses from a training school be given longer periods to adapt to the hospital and that hospitals should shed their still caste-like structures and become more open to society.

347. DEL BUENO, D. J. and QUAIFE, M. C. **Special orientation units pay off.** *American Journal of Nursing*, New York, 1976, Oct., vol. 76, no. 10, pp. 1629-1631.

At Columbia-Presbyterian Medical Center, New York, each newly appointed nurse is assigned to one of 10 clinical areas. Each of six of these areas has a full-time instructor whose only responsibility is the orientation of nurses. On the other services, a supervisor or staff person acts part-time as instructor. Performance expected of the new nurse is outlined in a written contract. Length of orientation depends on how quickly the nurse fulfills the performance contract, though there is a maximum time limit of 12 months. Details are given of some of the procedures followed. Since the first one opened in 1968 1,015 registered and 192 practical nurses have passed through the six orientation units. In 1970 turnover within two years was 28 per cent for orientation unit nurses and 38 for others. The nurses' reaction has been favourable. Orientation also enables the hospital to evaluate the performance of new nurses and develop appropriate training programmes.

348. MCGRATH, B. J. **Nursing in area health education centers.** *American Journal of Nursing*, New York, 1976, Oct., vol. 76, no. 10, pp. 1605-1607.

North Carolina now has nine area health education centres (AHECs), six affiliated with the University of North Carolina, and one each with the Bowman Gray, Duke University and East Carolina medical schools. Eight of them have recruited a nurse to plan and supervise nursing activities. The AHECs have made possible programmes for rural nurses in ward management, clinical experience in nursing high-risk infants, refresher courses, and provision of clinical preceptor assistance for new graduates in a small hospital. Details are given of these programmes, with a brief mention of others.

349. KUSHNER, J. **A benefit-cost analysis of nurse practitioner training.** *Canadian Journal of Public Health*, Ottawa, 1976, Sept./Oct., vol. 67, no. 5, pp. 405-409.

McMaster University established in 1971 a pilot training scheme to upgrade the qualifications of registered nurses in order to enable them to carry out part of the clinical work normally carried out by doctors. The economic returns to the scheme are analysed from the aspect of: (i) the individual; (ii) society; and (iii) the government budget. The benefits and costs to the nurse practitioner are evaluated, together with the returns of investment. From the point of view of the individual, training is financially profitable. The economic costs and benefits to society indicate that such training is of benefit to society, whilst the benefits and costs from the economic aspect and government view point indicate that it is desirable only if nurse practitioners remain in the labour force for 30 years.

350. SMITH, J. P. **Sociology and nursing.** Edinburgh & London, Churchill Livingstone, 1976, v, 179pp. £2.95

This book has been written in the hope that it will enhance the functions of nurses and other health care professionals by providing a sociological perspective on health

care and nursing. There are chapters on: the science of sociology; research and nursing the nursing profession; roles—patient and nurse; demography; organizations; socialization—becoming an individual in society; implications of socialization; socialization in the hospital social system—becoming a nurse and patient; and the British welfare state.

351. Der Pflegebereich unter betriebswirtschaftlichen Gesichtspunkten. **[The nursing service from the point of view of economic management.]** *Veska*, Aarau, 1976, Nov., vol. 40, no. 11, pp. 532-536.

An assessment is made of the factors which affect the work of nurses on wards. These are: medical and nursing factors; hygiene; work physiology; environment; and management functions. In addition the effect of the form of nursing used (progressive patient care; functional nursing; room nursing; and group nursing) is discussed and the advantages and disadvantages of each method briefly set out. Other factors assessed include the grade of nurses (from registered nurse to nursing aide) employed and the extent to which nurses are relieved of non-nursing duties. As a guide for complements it is suggested that 0.66 to 0.69 nursing staff members per average occupied bed is adequate.

352. McCormick, T. R. **The medical nurse practitioner in the skilled care facility.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 176, 180-181.

Park Ridge Hospital, Rochester, N.Y., opened a 120-bed skilled nursing facility (SNF) as the first phase of a total health care complex for geriatric patients. Difficulty was found in providing patients with adequate coverage by doctors, both in terms of finding a doctor to assume the care and in meeting the 30-day visit requirements. A group arrangement of doctors has been established and a medical nurse practitioner (MNP) assigned to work with the SNF physician group. Much basic groundwork was required in order to organize the scheme. The MNP is directly responsible to the doctors for the care of their patients although she is supervised by the part-time medical director. She sees all new patients and carries out a pre-admission evaluation and a history and physical examination. She also evaluates the results of laboratory studies and records her recommendations for a plan of care. The advantages of the system are: continuity of care for patients and doctors; fulfillment of the statutory 30 days requirements; better use of the facilities; patients no longer have to be transferred to an acute care facility; and an improvement in the quality of overall nursing care. The problems of a lack of personal relationship between the doctor and the patient are considered. The scheme has been accepted by the patients and families. From an administrative viewpoint the scheme has been successful and the only direct expense is the increase in costs resulting from the costs of the doctors and the salary of the MNP.

353. World Health Organization. Regional Office for Europe. **Role of nursing in psychiatric and mental health care: report on a working group, Saarbrücken, 10-13 March 1975.** Copenhagen, W.H.O., Regional Office for Europe, 1976, iii, 30pp.

The purpose of this meeting was to define the different roles of nursing within institutional and community services in order to suggest guidelines for the effective

development of mental health nursing services in the foreseeable future in Europe. The report covers: the present situation; nursing in mental health care and the place of mental health nursing in the nursing system; roles of the various members of the nursing team; nursing staff in the interdisciplinary team; the mental patient, the family and the community; and education, management and use of nursing staff in mental health services. The report makes 20 recommendations on organization, management and delivery of services and educational matters.

OTHER PROFESSIONAL AND TECHNICAL STAFF

See also Abstract Nos. 333, 337

354. BUCKLEY, R. D. **Management development—the way ahead.** *Hospital Engineering*, London, 1976, Nov., vol. 30, pp. 8-18.

A comprehensive survey of the planned development of the next generation of managers within the National Health Service is presented. Management development for works officers should embrace all staff and begin with the initial entry to the service and end with retirement. The basis of current selection boards and interviewing is considered in the light of selecting a single member of staff. The training procedures are outlined and possibilities for altering the system are discussed. A typical personal specification for the grade of assistant hospital engineer is presented, outlining: the initial requirements; duties and responsibilities; environment and conditions of service; and social background. The selection for management using the academic approach and the classical approach involves establishing nine stages: preparation of a personal specification; distillation from job specification of information for the advertisement; publication of advertisement; preparation of additional information with an application form; despatch of application form; scrutiny of written applications; administration of tests; interviewing of shortlisted candidates; and notification of decisions. Management development procedures are outlined together with training principles. Modern management development may involve considerable changes in attitude, and the formulation of programmes must be seen as totally open and agreed in full with those participating.

ANCILLARY STAFF

See also Abstract No. 386

355. NAYLOR, C. M. **Two types of domestic worker.** *Hospital and Health Services Review*, London, 1976, Dec., vol. 72, no. 12, pp. 422-425.

The results of a questionnaire completed by 72 domestic workers from two South Teeside hospitals indicated that there are some workers who are better suited to hospital domestic work than others. An inter-correlation matrix was produced from the survey and factor analysis carried out. The questionnaire and method of analysis are discussed, together with the differences between attitudes of workers. The results indicate that domestic workers see their work in a more or less favourable light on grounds which are specific hospital independent and which are less likely to be caused by items either external to the hospital or items which are common to all hospitals.

ORGANIZATION AND ADMINISTRATION

See also Abstract Nos. 325, 336, 354, 400, 401

356. LINDSAY, C. M. **A theory of government enterprise.** *Journal of Political Economy*, Chicago, 1976, Oct., vol. 84, no. 5, pp. 1061-1077.

The first part of this paper develops a model of government enterprise which contrasts the supply behaviour of government and proprietary organizations. Refutable implications are derived from an explicit information structure in which the productivity of management must be monitored indirectly and differently for the two types of organization. Managers of both are assumed to be wealth maximizers. It is suggested nevertheless that the output behaviour of government enterprises will differ from that of proprietary enterprises in predictable ways—even where Congress intends the output of government bureaux to be identical to that of proprietary firms. In the second part of the paper numerous specific implications are developed and tested with reference to the operation of Veterans Administration hospitals.

357. BRADEN, F. M. **Unit managers serve as liaison between administration, wards.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 91, 93-94.

Duke University Hospital, Durham, N.C., developed a middle management plan blending central and ward-level administration to improve interdepartmental communications, and bureaucratic procedures. The hospital was divided to produce six units such as obstetrics-gynaecology, paediatrics, and general surgery; all six units, consisting of three to five wards, were administered by unit managers. Arranging the units by medical divisions allowed each unit manager to have a homogeneous unit to administer and avoid the confusion of working with many different disciplines. The scheme has evolved from the original concept that the unit manager was director of his own 'hospital'. Lines of communication and co-operation have now improved and the only staff directly responsible to the unit manager are ward clerks and porters. The role of the unit manager is discussed: he revises hospital procedures and helps implement these decisions; he is closer to problems that arise than many upper-level administrators and is consequently in a better position to deal with them; he has a greater understanding of ward situations; and the experience contributes to the development of his managerial skills. From the pool of unit managers the hospital can select staff who will provide high-quality management in upper-level positions.

358. FREDRICKSON, J. W. and HARDY, C. T. **Student work projects benefit: health care administration.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 91, 92, 94, 96-97.

This paper describes a scheme under which all students from Babcock Graduate School of Management, Wake Forest University, Winston-Salem, N.C., carry out a field study project in North Carolina Baptist Hospital Medical Center. During the past four years 29 students have worked for their project 'clients' one day a week for four months. The students' activities are described and a project in the diagnostic X-ray department is outlined. The scheme has proved beneficial to the hospital and two of the students have joined the hospital staff on graduation.

359. LATIMER, B. W. **Developing multihospital arrangements: some practical considerations.** *Hospital Progress*, St. Louis, 1976, Oct., vol. 57, no. 10, pp. 62-67.

Carolinas Hospital and Health Services, Inc. (CHHS) is an independent non-profit shared services corporation serving hospitals in North and South Carolina. About 100 hospitals use one or more of its services: management engineering, clinical engineering, group purchasing and data processing. This paper describes the management services division which in June 1976 was managing seven hospitals under agreement with their local boards. Most had less than 100 beds and each was the sole hospital in its community and before CHHS management had at best a one-man administrative staff. The advantages and some constraints of the system are discussed. Although CHHS has only been in operation for 1½ years, it is obvious that service and quality improvements have been the major accomplishments, so far. Some evidence indicates that cost savings will also result. Boards of trustees seem to have had little difficulty in accepting CHHS in a strong administrative role. The hospitals also appear to have improved the quality of clinical care.

ECONOMICS OF HOSPITAL MANAGEMENT

See also Abstract Nos. 323, 349, 351, 423

360. GREGORY, D. D. **Some evidence on the economic aspects of hospital co-operative ventures.** *Journal of Economics and Business*, Philadelphia, 1976, vol. 29, no. 1, pp. 59-64.

The effects of sharing on four departmental cost functions (laundries, purchase of housekeeping supplies, purchase of linen supplies and blood bank) were investigated. The study was restricted to short-stay, general, non-profit, non-governmental, non-religious and non-teaching hospitals. The relationship between departmental costs and the organization of the department was considered using nine variables: (i) salaries, man-hours; (ii) total number of adult beds; (iii) patient days of care; (iv) total revenue; (v) non-operating revenue; (vi) contributions; (vii) pounds of laundry; (viii) square feet of housekeeping space; and (ix) units of blood taken. Analysis of laundries revealed that shared laundries achieve economies of scale over a wide range of outputs. Costs fell more rapidly, but this method is only efficient for large co-operative laundries not for those of low or medium output. Co-operative purchasing of housekeeping supplies appears to be an efficient alternative to independently operated facilities. Interpretation of the effects of sharing on the other two facilities are tenuous in the light of disappointing results of the average cost estimation. No definite statement can be made regarding the outcome of individual shared service investments, although the results provide some information regarding the policy of wholesale sharing as a means of cutting hospital costs.

RUNNING COSTS

See also Abstract Nos. 304, 407

361. FETTER, R. B., THOMPSON, J. D. and MILLS, R. E. **A system for cost and reimbursement control in hospitals.** *Yale Journal of Biology and Medicine*, New York, 1976, May, vol. 49, no. 2, pp. 123-136.

Recent United States legislation to control hospital costs has met with varied

success. This paper considers the design of a regional or statewide hospital rate-setting system to underpin a larger system which allows a regulatory agency to fulfil the requirements of various public laws. It should generate valid inter-institutional monitoring on the three parameters of cost, use, and quality review. The objectives of the system are considered. The central logic will describe each hospital in terms of the patient case mix and use of resources including patient days. The system includes: (i) uniform accounting and reporting; (ii) a set of processes for capturing patient abstracts and changes as inputs to a central statistical system; (iii) uniform financial reports and budget analysis; (iv) classification and reporting of individual and comparative measures of hospital performance and use; (v) evaluation of the quality of care; and (vi) reporting system to support a basic rate-setting and reimbursement capacity. It is divided into an in-hospital and a centralized, state, or regional component, and may be considered as consisting of two subsystems at each level: budgeting and accounting, with the capture of patient data. The system attempts to establish links between the control of patient care in terms of quality and cost, and controls the resource consumption according to the relevant medical standards.

362. KRETSCHMAR, C. G. **Know how to analyze costs in evaluating savings projects.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 69-72.

Four types of cost savings are identified: (i) direct savings resulting from a net reduction of resource flows; (ii) opportunity cost savings, such as those associated with avoiding costs or securing intangible benefits; (iii) improvements in the quality of services with an increase in costs; and (iv) increased output of services without increases in costs. A model for measuring cost savings is described and the form on which it is based is reproduced. The model is best described as differential cost tracing applied to direct actual cost savings. An example of the use of the model is given.

BED OCCUPANCY, ECONOMIC USE OF BEDS

See also Abstract Nos. 361, 399, 404

363. ESOGBUE, A. O., and SINGH, A. J. **A stochastic model for an optimal priority bed distribution problem in a hospital ward.** *Operations Research*, Baltimore, 1976, Sept./Oct., vol. 24, no. 5, pp. 884-898.

Ward beds are a primary resource under the control of hospital management, but the management strategies used do not explicitly consider the stochastics, as well as the relevant cost dynamics, involved in the process. This paper develops a method for determining an optimum distribution of beds in a ward by assuming that patients can be classified into two categories (serious and non-serious), that admissions follow Poisson distribution, and that length of stay in the ward follows the negative exponential distribution. After defining a cut-off level as 'the number of beds beyond which non-serious patients are not admitted', the authors develop a system of differential and difference (birth and death process) equations for the process. An objective function made up of shortage and holding costs is then developed and optimized for various levels of cut-off priority level. The application of the model in a teaching hospital is described. The model is then extended to a situation where overflows are temporarily housed in buffer accommodation or an inappropriate ward.

364. CHISWICK, B. R. **Hospital utilization: an analysis of SMSA differences in occupancy rates, admission rates, and bed rates.** *Explorations in Economic Research*, New York, 1976, vol. 3, no. 3, pp. 326-378.

The determinants of regional differences in the use of short-stay general hospitals in Standard Metropolitan Statistical Areas (SMSAs) in 1967 were analysed using three interrelated variables: bed rate, annual occupancy rate and annual admission rate. The analyses of the occupancy rate and the bed rate are largely based on the existence of short-run variations in the demand for hospital care. The random demand for care is an essential consideration in hospital planning. The average occupancy rate is positively related to the admission rate. Beds in different hospitals are imperfect substitutes for each other; admissions could be co-ordinated by removing artificial barriers to admission in some hospitals (e.g. veteran status), producing an increase in the occupancy rate of 3.5 per cent. The analysis indicates that hospital admission rates are greater in SMSAs where there is more hospital and surgical insurance coverage, more unused capacity, more surgeons per capita, no HMOs and more non-whites. The presence of non-surgical doctors is not related to hospital admissions. The theory behind the model and the analysis is discussed.

365. SCHWENN, P. **Bed utilization improved under program's three review phases.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 76-78.

The quality care analysis system at Jennie Edmundson Memorial Hospital, Council Bluffs, Iowa, includes admission screening, concurrent review, and retrospective analysis. An admission screening certificate is prepared for each new patient and examined within 24 hours by a health record analyst who assigns a diagnosis category and length of stay. Category 1 and 2 patients have automatic approval but require subsequent retrospective analysis. Category 3 patients are referred for physician review when admission justification cannot be substantiated on the basis of the admission screening certificate, an admitting note, or personal communication. All category 4 patients undergo physician review. Following admission screening, the health record analyst establishes the expected length of stay using PAS data at the 50th percentile for the central region. This is posted on the patient's chart and the health record analyst makes daily bed rounds to review the chart of each patient nearing the end of his length of stay. She may extend the length of stay or refer the case for physician review. CHPA statistical data is used to develop criteria of care for retrospective review.

DATA PROCESSING

See also Abstract Nos. 303, 344, 345, 371, 376, 417, 419-422

366. NORWOOD, D. D., HAWKINS, R. E. and GALL, J. E. **Information system benefits hospital, improves patient care.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 79-83.

The 464-bed El Camino Hospital, Mountain View, Calif., is undertaking a comprehensive evaluation of the medical information system (MIS) developed by the Technicon Medical Information Systems Corporation. This computer system assists the delivery of patient care in three principal ways: (i) as a custodian of medical and

non-medical patient data that are readily accessible and current at all times; (ii) as an accurate communications device for rapidly transmitting orders or receiving current information; and (iii) as an organizer of the computerized patient data base, which can produce useful results such as cumulative laboratory reports and seven-day medications summaries. The impact on doctors, nurses, support areas, and administration is discussed. There appears to be little question that MIS is cost-effective at this hospital and that an explicit benefits realization phase is a necessary ingredient of the implementation process if cost-effective operation is to be obtained. Potential additional applications include a quality assurance programme.

367. STILLMAN, R. M. and others. **The computer as an unbiased medical investigator, experience on an active surgical service.** *American Journal of Surgery*, New York, 1976, Aug., vol. 132, no. 2, pp. 209-213.

An adaptable on-line computer system for entry, renewal and analysis of medical discharge summaries has been developed and applied in the Trauma Surgery Ward, Kings County Hospital, Brooklyn, N.Y. The computerized medical data system (MEDS) was designed to assure not only simplicity of entry of the discharge summary and accuracy and speed in performing statistical analyses from the information stored but also ease of actually programming the computer for eliciting the information required on any particular service. The method used for MEDS is discussed. Each summary took five to 10 minutes of the doctor's time and compared favourably in cost to the standard dictated summary. The machine-generated summaries were found to have 53 ± 20 relevant facts while the average dictated summary had 15 ± 7. The summaries are well presented and easy to understand, and a duplicate copy can be obtained at anytime by using the patient's name or number for identification. Statistical analysis from the data base is carried out by the computer, thus eliminating human prejudice. The system can be used for rapid and accurate retrospective studies as well as pattern of care and individual case reviews.

ORGANIZATION AND METHODS, WORK STUDY

See also Abstract No. 430

368. WALLDREN, L. **Four small hospitals apply new methods improvement tool.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 87-89.

The New Mexico Hospital Association has carried out a pilot scheme in four hospitals, based on the American Hospital Association's manual *Improving work methods in small hospitals* [see *Hospital Abstracts*, Vol. 16, Abstract 497]. The aim was to provide higher quality patient care by using hospital staff more effectively and without increasing costs. The steps for implementing the scheme were: (i) prepare a quality improvement plan and decide which departments will implement it; (ii) define the standards of quality; (iii) design the inspection method; (iv) provide check lists; and (v) implement the scheme. The scheme is simple to establish and does not require formal training for staff or special equipment. Team members regularly evaluate the quality in certain areas. Service is improved through the correction of unsatisfactory conditions revealed as a result of the inspection. Improvements in conditions in the

four hospitals cover nursing care, food service, housekeeping and administration. All departments reported greater enthusiasm, efficiency and improved morale; there were few negative comments. The scheme can also be applied to other small health care organizations e.g. clinics, nursing homes and self-contained departments in large hospitals.

MEDICAL RECORDS

See also Abstract Nos. 366, 367, 397, 418, 426

369. SEAWRIGHT, L. C. and LINDEN, C. R. **Record system ties patient data from hospital and private care.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 132, 136, 140, 144, 146.

Boone (Iowa) County Hospital developed and tested a uniform comprehensive health record system to serve as a model for other hospitals and health professionals. Its purpose was to assess and record patient needs and patient care in clear precise terms. The Uniform Medical Record System (UMRS) was developed over a 15-month period and as a result of discussions various schemes were implemented: (i) pre-admission registration to ensure the receipt of patient information in the hospital before elective and non-elective admissions; (ii) a co-operative medical collections scheme; (iii) dictation of all out-patient and emergency department reports; (iv) a list of 59 frequently used diagnostic and medical codes printed on the record forms; and (v) a master list of current procedural terminology codes distributed. A problem-oriented medical record system was implemented: forms were standardized into a single carbon multipurpose form to replace the individual history, physical, consultation, operative report and discharge summary forms. The continuity of auditing improved with noticeable time savings. The advantages of UMRS are: (i) clarifies the relationship between problem and treatment; (ii) maintains continuity of a patient's records; (iii) facilitates patient management; (iv) better communication; (v) team approach developed; (vi) framework for judging treatment by providing a standard for care and the record of care provided; (vii) greater patient education by emphasizing preventive medicine; (viii) efficiency of doctors improved; and (ix) meets the legal requirements of PSRO standards.

370. VANDENSCHRIK, J. Les soins globaux au malade: retentissement dans l'organisation du travail hospitalier. **[Complete patient care: effects on the organization of hospital work.]** *Techniques Hospitalières*, Le Kremlin-Bicêtre, 1976, Nov., vol. 32, no. 374, pp. 69-72.

If the patient is to receive comprehensive care there must be a rapid and continuous flow of information between all those involved in care, the physiotherapist and dietitian as much as the doctor and the nurse. To this end a record of communications and observations by staff directly involved with the patient has been devised at the Thérasse Institute at Mont-Godinne. It consists of report sheets (of different colours for different data, treatments, diet, social data, occupational therapy, etc.) held in place on an anodized aluminium board by means of a hinged vertical flap. Records for all the patients in a unit are kept on a wheeled trolley for easy access.

371. VALOIS, J. and others. Dossier résumé de sortie des malades et statistique médicale (Système DOSTAM). **[Patient discharge summary and medical statistics (DOSTAM system).]** *Santé Securité Sociale: Statistiques et Commentaires*, Paris, 1976, July/Aug., no. 4, pp. 5-22.

The DOSTAM system is designed to permit the filing of summaries of medical records, the indexing of observations of diseases, the compilation of annual morbidity statistics, and the retrieval of records for administrative purposes or for research. It is used in Grenoble University Hospital Centre and 10 hospitals in the region. A typed summary is retained and the patient's name and number, the record number, date of admission, date of discharge, and discharge code, as well as up to seven separate pieces of information on diagnosis and treatment are coded. The WHO International Classification of Diseases is used for diagnoses and the VESKA code for diagnostic and therapeutic interventions. The data store can be interrogated either by batch processing or in the conversational mode. Examples of the input forms and of the output are included.

372. DENRECZENI, P., ZÁLOGH, S. and KÁROLYI, G. Új rendszerü járóbetegnyilvántartás szakorvosi rendelöintézetek részére függeszthetö személyi irattartóval, mozgatható szekrénysorokkal. **[New polyclinic medical record system using suspended files in movable filing cabinets.]** *Egézségügyi Gazdasági Szemle*, Budapest, 1976, June, vol. 14, no. 2, pp. 274-291; summaries in Russian, English and German, pp. 291-292.

The polyclinics in Berettyóúfalu, Hungary, which serve a population of 100,000, have organized a central medical record system to replace one based on records completed by individual departments. Each patient has a personal folder with an identity number. The folders containing colour-coded sheets completed by individual departments and the results of tests are placed in suspended files, which are stored in metal cabinets which can be moved easily by means of a lever. The system, which is most economical in the use of space, could be expanded to cover other forms of community care and the results of screening. It may play a significant role in the integration of all health facilities.

HOSPITAL STATISTICS

See Abstract Nos. 371, 397

LEGAL ASPECTS OF HOSPITAL ADMINISTRATION

373. FARNDALE, W. A. J. and LARMAN, E. C. **Legal liability for claims arising from hospital treatment. 2nd edition.** (Case Studies on Health Service Management Law and Practice, Vol. 4) Beckenham, Ravenswood Publications, 1976, 56pp. £4.50

The new edition of this booklet first published in 1973 [see *Hospital Abstracts*, Vol. 13, Abstract 1285] has been revised where necessary and includes references to relevant new cases.

374. MARYLAND HOSPITAL EDUCATION INSTITUTE. **Controlling hospital liability: a systems approach.** Chicago, American Hospital Association, 1976, vii, 29pp. $6.00

This booklet offers a solution to the legal liability problem which is not a legal or an insurance or a medical solution. It is a hospital-based solution that encompasses every aspect of patient care, from the time the patient enters the admitting office through diagnosis, treatment, recovery and discharge. The system is based on a liability control centre, into which hospital departments feed information on incidents. Steps in establishing the system are: (i) obtaining top-level commitment; (ii) integrating training and educational programmes; (iii) identifying high-risk priorities; (iv) establishing/refining policies, procedures and documentation; (v) choosing and implementing an organizational model; (vi) improving physician-patient-nurse-hospital communication; (vii) improving post-claims co-ordination; and (viii) evaluating the system.

FINANCE AND ACCOUNTING

FINANCE

See also Abstract Nos. 361, 437

375. HANNIG, V. **'Advancing averages' develop trends for budget projections.** *Hospital Financial Management*, Chicago, 1976, Oct., vol. 30, no. 10, pp. 38-40.

This paper presents one method of using historical data to project departmental data for a future period. The method is referred to as advancing average statistics. To develop a sound base for projections of future data, calculation of trends for at least the most recent two or three years is recommended. Advancing average per unit of service statistics develop trends to be used in forecasting budget statistics. While the statistics are used primarily for budgeting revenue, they may also be used for budgeting supply cost or other items which relate to departmental units of service. The advancing average method develops a data base using, by unit of service, the monthly statistics for a specific period of time, i.e. three, six or 12 months. The calculations used are outlined.

376. RUSSELL, S. **New tools for budgeting and cost analysis.** *Dimensions in Health Service*, Toronto, 1976, Nov., vol. 53, no. 11, pp. 33-35.

Systems Dimensions Limited (SDL) undertook a major research and development project to develop computer software and related administrative procedures to help in health care planning, budgeting and cost analysis. A primary pilot project was carried out at York County Hospital, Newmarket, Ont., since the hospital had recently expanded its facilities and introduced a minicomputer to assist in the running of the hospital. The Method for Efficient Decision Making and Institutional Cost-Estimation (MEDIC) developed systems which use the data available from staff, patient and financial records to describe the activities of health care facilities and provide the methodology and analytical systems for planning and budgeting at the institutional or regional level. The system divides demand into four phases: patient load, work

load, resource requirements and unit costs. There are seven MEDIC analytical systems: demand analysis; demand forecasting; planning; budget preparation; cost allocation; case (disease) costing; and input editing and reporting. The advantages of using the computer for the various analyses are discussed. The pilot projects at York County Hospital indicated that MEDIC could be used to demonstrate cost savings and become an effective cost effective management tool for use in all hospitals in Canada.

377. KEINTZ, R. M. **National health insurance and income distribution.** Lexington, Mass., D.C. Heath, 1976, xvii, 218pp. £9.45

The intention of this study is to present one major focus on the issue of national health insurance in the United States—its possible effects for people at the various income levels. There are chapters on: national health insurance proposals; the distribution of income in the United States; national and personal health expenditure; private health insurance; use of and expenditure for personal health services by family income groups; the benefit structure of national health insurance; alternative sources of financing national health insurance; and the distributional effects of Medicare and Medicaid. On the basis of the study, six current proposals for national health insurance are ranked according to certain distributional effects. The authors then recommend specific provisions that would eliminate any possibility of potential distribution effects due to the cost and benefit structures of the proposed plan (or successfully mediate any such effects).

HOSPITAL ACCOUNTING

378. SEIDEL, G. Kaufmännisches Rechnungswesen als Instrument der Betriebsführung. **[Commercial accounting as an instrument of management.]** *Krankenhaus Umschau*, Kulmbach, 1976, Dec., vol. 45, no. 12, pp. 873-886.

This paper describes in detail the main features of a comprehensive accounting system, including cost accounting, and their importance as an instrument of hospital management. The paper is illustrated with specimen extracts from accounts. The main heads of the paper are as follows: the balance sheet as a means of information and control; the profit and loss account as an aid to decision-making; cost accounting as an instrument of management; and planning accounting and the carrying through of planning objectives.

379. ZÜNDEL, G. J. Strategie der Umstellung des Rechnungswesens im Krankenhaus. **[Strategy for the reorganization of hospital accounting.]** *Krankenhaus Umschau*, Kulmbach, 1976, Dec., vol. 45, no. 12, pp. 870-872.

Recent West German legislation on hospital finance requires hospitals to adopt an accounting system which will give a costing breakdown and indicate whether management is economical and efficient. This paper describes in broad outline the principles which should govern the change over to an appropriate accounting system. The three heads under which this is set out are planning, implementation, and control and deviation analysis. The project should be supervised by a steering committee, on which representatives of all departments concerned should serve.

SUPPLIES AND STORES

STORES

See Abstract No. 324

CATERING, DIETETICS, KITCHENS

HOSPITAL CATERING

380. McPROUD, L. M. and DAVID, B. D. **Applying value analysis to food purchasing.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 109-112, 114.

Eight factors are considered to be important in selecting market forms of food and can be quantified for value analysis: nutrients, microbiological data, cost, sensory appeal, temperature, ingredient composition, labour and equipment. This paper describes how these factors were incorporated in an application of the value analysis technique as part of a research project to develop a procedure that would evaluate the functions of two market forms of a frozen entree and that would demonstrate the collection, analysis and use of quantitative data for the value analysis process. The study was carried out in a simulated hospital catering system. The results are described and discussed. The procedure could be used by hospitals participating in group food purchasing.

381. O'DONNELL, J., ROBERTS, L. W. and STINEBAUGH, E. H. **Pharmacy-based special infant formula service.** *American Journal of Hospital Pharmacy*, Washington, 1976, Oct., vol. 33, no. 10, pp. 1018-1020.

Cook County Hospital, Chicago, Ill., established a formulary of acceptable special therapeutic formulas for infant feeding. The hospital's dietary departments used to produce all milk formula foods for infants in the Children's Hospital but when the National Baby Formula Service (NBFS) was established the 'Milk-Lab' was shut down. Now that the NBFS has cancelled its contract the hospital pharmacy service has developed a special infant formulary service, in conjunction with the paediatricians. Space and equipment originally intended for intravenous admixture and total parenteral nutrition services were supplemented to include special infant formula services. The staff and equipment requirements, and quality control procedures of the service are discussed.

FOOD SERVICE

382. VariServ leidt tot gemiddelde besparing van 20% op brood- en warme maaltijden. **[The VariServ results in an average 20% saving on snacks and hot meals.]** *Voeding- en Huishoudgids*, Amsterdam, 1976, Oct. 18, vol. 43, no. 525, pp. 464-467.

The Stierlen VariServ food distribution system used in the 350-bed Gerardus Majella Hospital, Hengelo, is modelled on the system pioneered by 500-bed Evangelical

Deaconess Hospital, Karlsruhe-Rüppurr, West Germany. Patients are issued with seasonally adapted menu cards giving choice of meals with code numbers for special diets. The patient marks his choice for a day on punch cards, a separate one for each meal. After lunch the cards are sent to the kitchen where within two hours they are automatically sorted, counted, and according to type of meal and individual components, registered on a food disposal plan to be passed on to the appropriate sections. The plan prevents waste and ensures accurate cost assessment. Separation of food distribution and food preparation has reduced working hours for kitchen staff. Meals are composed of: (i) pre-prepared foods stored in 'Gastronorm' containers at a temperature of 4°C; (ii) deep-freeze products; (iii) preserves; and (iv) freshly cooked products (high pressure cookers). Meals are served on heated plates (80°C) which are kept warm (or cool with cold pellets for cold meals) in double-walled, insulated, covered containers (thermo-sets) and conveyed on tray-transport trolleys via conveyor belts.

383. BRYAN, L. and FRITZ, M. **Increase employee productivity and patient satisfaction.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 125-128.

Harper Hospital Division of United Hospitals of Detroit reviewed its food service in the light of an intended expansion of the hospital to 789 beds. At that time food was distributed in bulk to unit kitchens sited in the basement of each hospital wing. Trays were assembled in the unit kitchens and sent to nursing units on dumb waiters or tray conveyors. Dishes and trays were returned to the unit kitchens in the same way. After investigation a food service was adopted that includes the following main features: (i) a central kitchen for preparing those dishes that are not available in a frozen form or do not meet food standards; (ii) the same kitchen pre-portions and plates bulk packaged foods; and (iii) use of microwave ovens for reheating meals on the nursing unit, where snack items are also prepared. A pilot kitchen was established to prepare, freeze and test entrees and to determine heating times in the microwave oven. The system now uses 80 per cent of frozen convenience foods and 20 per cent of foods produced in the kitchens. There are 34 pantries each serving a patient area of 20 to 24 beds. The staffing of the unit is discussed: since food is prepared in advance week-end staff requirements can be reduced without affecting the quality of meals served. The advantages of the system include: staffing requirements have been reduced; there is a wider menu selection; assembly time has been shortened; productivity has increased; product life has been extended; high quality food is served at the correct temperatures; portioning and plating have produced a better use of manpower; and significant savings in costs have resulted.

WASHING UP, CLEANING OF EQUIPMENT

384. In Streekziekenhuis te Bennekom verwerkt zes man de vaat van 1000 mensen. **[At Bennekom Regional Hospital six men cope with dishwashing for 1,000 people.]** *Voeding- en Huishoudgids voor Ziekenhuis en Instelling*, Amsterdam, 1976, Nov. 15, vol. 43, no. 526, pp. 525, 527, 529, 531.

Dishwashing at this hospital is carried out in a large, separated section of the central kitchen. Dirty dishes arrive in trolleys and are transferred to two conveyor belts leading to an Electrolux dishwasher. One belt, on which three men carry out the

sorting, takes large crockery and containers with cutlery; an electric device at the end prevents dishes sliding off while service trays drop into a spring-suspended frame. The second belt, running parallel, takes baskets stacked with small crockery which are transferred from the sorting belt via a system of sliding arms; a hinged flap at the end can be raised to stop the belt moving. A tapered gulley underneath, leading to the drains and provided with a water supply and a grid, serves to catch dropping food wastes. The dishes are loaded into the dishwasher by one man. When they emerge clean they are loaded on to the appropriate trolleys by two men. The men work to a clearly defined schedule, starting at 06.30 with the previous night's dishes. Hours are staggered and a five-day working week has been achieved. The paper includes two plans of the kitchen, a work schedule and five photographs.

LAUNDRIES AND LINEN SERVICE

HOSPITAL LINEN AND TEXTILES

385. JOHNSON, R. M., SMITH, C. V. and LEGGETT, K. **Flammability of disposable surgical drapes.** *Archives of Ophthalmology*, Chicago, 1976, Aug., vol. 94, no. 8, pp. 1327-1329.

The high degree of inflammability of disposable surgical drapes is discussed. The regulations of the United States Flammable Fabrics Act refer mainly to children's clothes, to prevent dangerous inflammable substances being sold over the counter. There is confusion between fire-resistant and fire-retardant materials, and surgeons may wrongly assume that because a certain surgical drape complies with the act that he is dealing with a fire-resistant, fire-retardant drape. Few institutions or surgeons personally test the drapes and most sales representatives are under the assumption that their drape will not burn under normal conditions. Two separate tests were carried out to check the inflammability of cotton drape and disposable drape using spark discharge at ignition source. The disposable drape has a flame spread rate from three to four to seven times faster than a classical woven cotton drape. The importance of a slower flame spread rate in head or neck surgery where corrective actions are available and where the surgeon is generally operating in a dry field with the use of cautery and some form of oxygen or air is emphasized.

HOSPITAL DOMESTIC MANAGEMENT

See also Abstract No. 355

386. RINDLISBACHER, R. and SUMBRUNN, B. Die Personalschulung in der Hauswirtschaft des Inselspitals. **[Training of domestic staff at the Insel Hospital.]** *Veska*, Aarau, 1976, Nov., vol. 40, no. 11, pp. 585-587.

After five years' experience of training courses for domestic staff at the Insel Hospital, Berne, it has been found that, in contrast to mere on-the-job training, the following advantages accrue: staff show more interest in otherwise monotonous work;

staff are more aware of the purpose and object of their tasks; and productivity has increased. Training is used for the induction of recruits, for correcting mistakes, for introducing new procedures, and for introducing refinements of existing methods. Training is both theoretical and practical and covers damp mopping, dusting, machine management, spraying, hygiene, and the cleaning of refrigerators. Basic training is carried out at the hospital but more senior staff attend external courses.

DOMESTIC WORK

387. FITCH, K. A. **Resilient and terrazzo floor care methods.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 148, 152, 154.

Floor care costs in hospitals exceed 50 per cent of the total cost of cleaning maintenance, consequently the proposal that it is practical to maintain some conventional flooring materials without the use of protective finishes and sealers has been received with interest. In the case of resilient floor surfaces there is definite evidence that replacement will be sooner where surface finishes are not used. Resilient flooring includes surfaces covered with sheet or tile composed of linoleum, asphalt compound, rubber, vinyl asbestos, vinyl or cork. Terrazzo is grouped with these floorings as it can be damaged by some of the same chemical and mechanical agents. The advantages and disadvantages of using waxes are discussed together with polymers and metallized finishes. Metallized finishes are recommended for heavy traffic conditions where regular wet-cleaning is necessary. 'Skin cleaning' is a recent development and is used in the aisles of supermarkets and corridors of buildings. Recommended methods for protecting terrazzo are outlined. The procedures discussed have been designed to reduce the frequency of floor stripping and refinishing and thus conserve man-hours and materials while protecting floors and providing good sanitation and an attractive appearance.

HYGIENE IN THE HOSPITAL

HOSPITAL INFECTIONS

388. GASSNER, C. B. and LEDGER, W. J. **The relationship of hospital-acquired maternal infection to invasive intrapartum monitoring techniques.** *American Journal of Obstetrics and Gynecology*, St. Louis, 1976, Sept. 1, vol. 126, no. 1, pp. 33-37.

A six-month survey of hospital-acquired uterine infection was carried out to evaluate the risk of the duration of monitoring upon the incidence of maternal infection. Women at high risk in the Los Angeles County-University of Southern California Medical Center revealed significantly more infection than those at low risk. The system of obstetric surveillance is outlined. The results indicated that the incidence of infection was: caesarean section monitored, 90 of 223 (40.4 per cent); caesarean section not monitored, 56 of 271 (20.4 per cent); elective repeat caesarean section, one of 21 (five per cent); vaginal delivery monitored, 33 of 1,236 (2.7 per cent); and vaginal delivery not monitored 49 of 3,445 (1.4 per cent). There was no difference in the duration of monitoring for patients with infection and those without. There was no

significant clinical link between the length of monitoring and development of maternal soft-tissue pelvic infection in a high-risk obstetric population. More studies should be undertaken to assess the role of internal monitoring, and in viewing risk factors caesarean section particularly in the women in labour must be ranked as a more significant variable in maternal morbidity than monitoring.

389. SCHABERG, D. R., and others. **An outbreak of nosocomial infection due to multiply resistant *Serratia marcescens*: evidence of interhospital spread.** *Journal of Infectious Diseases*, Chicago, 1976, Aug., vol. 134, no. 2, pp. 181-188.

Between 1 April 1973 and 1 Jan. 1975, 210 patients in four geographically separate hospitals in Nashville, Tenn., were infected with a strain of *Serratia marcescens* that was resistant to all currently available parenteral antibiotics. Twenty-one patients were bacteraemic and eight died. Catheter-associated urinary tract infection accounted for the majority of isolates, and broad-spectrum antibiotic exposure appeared to promote the acquisition of the epidemic strain. The serotype and phage type of the organism were identical in all four hospitals, but background, sensitive strains of *S. marcescens* yielded a variety of other serotypes. Carriage on the hands of hospital staff was implicated as the mode of spread within the hospital and apparently was the mode of transmission between the hospitals.

390. WENZEL, R. P. and others. ***Providencia stuartii*, a hospital pathogen: potential factors for its emergence and transmission.** *American Journal of Epidemiology*, Baltimore, 1976, Aug., vol. 104, no. 2, pp. 170-180.

The emergence of *Providencia stuartii* as a hospital pathogen in the burns unit of the University of Virginia Medical Center was revealed by routine infection surveillance. The organism was initially recognized in a burn wound and subsequently in urine and sputum. Several surveys for the prevalence of *P. stuartii* were carried out and the relative susceptibilities to antibacterial agents of eight isolates of *P. stuartii* and 18 isolates of *Pseudomonas aeruginosa* determined. Patients with *P. stuartii* were similar in age and percentage of body surface burned, and more likely to have been in one of the two burns unit rooms. Once patients were colonized they had a greater morbidity rate than non-colonized patients, stayed longer in the unit and visited the operating theatres more often for debridement. *P. stuartii* was isolated from air samples more frequently than from the hands of staff. In vitro tests suggested that extensive use of parental gentamicin and replacement of the antibacterial topical cream sulfamylon by silver sulfadiazine favoured the emergence of *P. stuartii* rather than *Ps. aeruginosa* as the predominant colonizing organism.

PREVENTION AND CONTROL

See also Abstract No. 438

391. BRITT, M. R., and others. **Infection control in small hospitals: prevalence surveys in 18 institutions.** *Journal of the American Medical Association*, Chicago, 1976. Oct. 11, vol. 236, no. 15, pp. 1700-1703.

The Intermountain Regional Medical Program, Utah, organized a scheme to provide assistance to the hospitals in Utah in meeting their responsibilities for maintaining surveillance of infections and for instituting appropriate infection control measures.

Prevalence surveys in 18 small hospitals in the region revealed that 20.4 per cent of the patients had community-acquired infections and 7.2 per cent had infections acquired within the hospital. The types of hospital infections and patterns of antibiotic use were similar to those in large hospitals. Cultures were obtained less frequently from hospital infections than from community-acquired infections in small hospitals, whereas the reverse was true for large hospitals. Seventeen of the small hospitals had an infection control committee but these were unable to assess adequately the extent of their infection problems. Monitoring of the environment with bacterial cultures was frequently carried out; one environmental culture was performed for every three diagnostic cultures. The results indicate that effective infection control schemes are as necessary in small hospitals as in large. Regional efforts to help small hospitals to develop infection control schemes should be increased. Training courses of one or two days in a regional centre should be provided. The role of 'outside' consultants in infection control needs redefinition to assure confidentiality to hospitals.

392. LIDWELL, O. M. **Clean air, less infection.** *Hospital Engineering*, London, 1976, Oct., vol. 30, pp. 9-17.

The acquisition of an infection must involve: (i) a source of the micro-organism; (ii) dispersal from the source; (iii) transfer through the environment; (iv) deposition on a susceptible site; and (v) multiplication. The possible routes for infection in an operating theatre are described. Attempts to control airborne transfer of infection in the operating theatre, general ward areas and in patient isolation areas are outlined. The results in practice are often unsuccessful. Only in certain situations will the airborne route be the most important. The level of air contamination which will reduce transfer of infection by the airborne route to below that due to the other routes must be assessed. Clues have been provided by limited studies that have been carried out, but the difficulties of carrying out conclusive investigations indicate that the situation is likely to persist for some time.

393. SCHWEIZER, R. T. **Mask wiggling as a potential cause of wound contamination.** *Lancet*, London, 1976, Nov. 20, vol. ii, pp. 1129-1130.

Surgical face masks are important in preventing wound contamination from the nasal and oral cavities of operating theatre staff. The problems of mask design have been increased due to the increased popularity of sideburns, moustaches and beards. Some staff have a habit of wiggling their surgical masks by moving their facial muscles. The field contamination resulting from this practice was studied by examining the contamination of culture plates held underneath the mask, and comparing them with simultaneously exposed culture plates placed nearby. Softer fibreglass masks produced less contamination when moved by facial muscles and are more suitable for mask wigglers. 'Mask wiggling' was seen as a 'nervous habit', and the rate of movement of the mask was positively correlated with both boredom and tension.

STERILIZATION

394. WELLS, L. L. **Programming a central service.** *ASSA Journal*, Matlock, 1976, Aug., vol. 4, no. 5, pp. 14-16; Nov., vol. 5, no. 2, pp. 10-12.

Central services can incorporate many activities concerned with supplies and

distribution systems. Before a central service can be established, plans must be made for the amount of and storage of sterile processed supplies and the type of delivery systems that will be used. Three steps in determining the work load are: (i) obtain a complete breakdown of the hospital components supported by the central service; (ii) determine the amount of activity in each of the hospital's functional areas; and (iii) analyse the types of material and processes necessary to decontaminate, clean, sterilize and disinfect the material. The functional areas are: (i) receiving, decontaminating and cleaning; (ii) support; (iii) instrument storage and assembly; (iv) assembly; (v) sterilization; (vi) sterile storage; (vii) equipment and trolley holding; (viii) administrative; (ix) lockers, lounges, toilets and showers; and (x) housekeeping. The method for determining the equipment and square footage of each functional area is outlined. There is a need to include projected work load if the hospital is to be expanded in the next five to 10 years.

AIR HYGIENE

See Abstract Nos. 392, 410

DISPOSAL OF WASTE

395. **Trash check yields more than garbage.** *Hospitals*, Chicago, 1976, Oct. 1, vol. 50, no. 19, pp. 11-12.

Duke University Hospital, Durham, N.C., recently carried out a study to investigate what materials were actually being thrown out by staff by mistake. Three 'trash check' days were carried out at random to provide a true sample of the rubbish. College students were employed as checkers to inspect the rubbish that was transported to the hospital's compactor between 0700 and midnight. Two types of articles were recovered from the rubbish: items that were not disposable; and disposable items that were in their original unopened wrappers or containers. The total value of the material found on the three days was $1,530. Items recovered included sutures, forceps, nebulizers, blood pressure cuffs, call bell cords, towels, sheets, bedpans, dressings, syringes, tape, miscellaneous containers, ashtrays, torches, pencils and pens. Hospital staff were made aware of their responsibility to exercise care in handling equipment and supplies and to make an effort to refrain from being wasteful by publication of the findings in the hospital newspaper. The important result of the study was staff education and information on disposables rather than the items themselves. Lack of knowledge and carelessness were at the root of the problem and the hospital is now planning in-service education on the handling of reusable items for all staff.

SAFETY MEASURES

ACCIDENTS, GENERALLY

See Abstract No. 411

FIRES AND FIRE PREVENTION

See Abstract No. 385

THE PATIENT

See Abstract No. 442

WELFARE OF THE PATIENT

See also Abstract Nos. 432, 443

396. LUIJTEN, J. J. Het welbevinden van de patiënt, een relatief en complex begrip. **[The well-being of the patient is a relative and complex concept.]** *Ziekenhuis*, Utrecht, 1976, Nov. 17, vol. 6, no. 22, pp. 602-604.

This paper discusses how the environment can contribute to the well-being of the patient and looks at the relationships between staff, patient and family. There is still a fundamental chasm between staff and patients. The staff, at all levels, lay down the rules and avoid close emotional contact with patients by treating the symptoms as more important than the disease and by dividing tasks. The concept of sociotherapy is gradually gaining ground. It is a method of using the patient's environment for therapeutic purposes and implies a reorganization of the clinical atmosphere. This can be achieved by better communication with the patient about his treatment, by giving more information about decisions to all ranks of staff, by taking decisions at all levels including the patient and by sharing responsibilities at all staff levels. The patient's family can also play an important part. Suggestions are made for family discussion groups, for staff to be more accessible to the family and for regular contact between family and staff.

VOLUNTARY SERVICE, VOLUNTARY WORKERS

See Abstract No. 450

TRANSPORT OF PATIENTS

See Abstract No. 309

HOSPITAL CARE

See also Abstract Nos. 315, 365, 370, 451-453

397. GEIGER, K. and ZSCHAEGE, I. Zur Nutzung der medizinischen Befunddokumentation für die Leitung und Planung der medizinischen Betreuung. **[The use of medical records for the management and planning of medical services.]** *Zeitschrift für die gesamte Hygiene und ihre Grenzgebiete*, Berlin, 1976, vol. 22, no. 5, pp. 374-382.

The aim of this paper is to show how hospital statistics and medical records can provide indications for the improvement of medical care. It is based on an analysis of the hospital statistics and medical records of 61 hospitals with a total of 18,493 beds in the Halle region of East Germany for the year 1973. Figures are given on average

length of stay, bed occupancy, age and sex distribution of patients, frequency of admission, etc. Special analyses, the results of which are set out in a series of tables, have been made of patients admitted for abortions, appendicitis, fractures, urological conditions, cardiac infarct, and some other conditions. The conclusion is that better allocation of patients to appropriate departments, more team work by specialists and improved management of patient care could lead to better quality of care.

398. HIMSWORTH, R. L. **Medical care in the community: acute medical care in hospitals in the 1980s.** *British Journal of Hospital Medicine*, London, 1976, Dec., vol. 16, no. 6, pp. 605-606, 609, 611.

The method of practice in acute medical situations has evolved slowly out of administrative and professional convenience. It may have to be modified to suit altered circumstances. A new and important factor is the acceleration in the rate of change of external constraints to the practice of medicine. The present imbalance between training and permanent posts in hospitals will be lessened. The greater medical and hospital experience of the next generation of general practitioners and the diminution of the number of junior hospital staff will lead to other ways of handling acute medical illnesses and the development of new intraprofessional relationships. The assessment of patients can be made easier by using a limited classification scheme to concentrate the resources of the hospital on those who have the greatest and most immediate needs. Hospital arrangements and the future role of the general practitioner in hospital are considered together with the change in the pattern of disease and its management. It would be better if the practice of medicine were reorganized in anticipation of these changes rather than in response to the onrush of events.

399. RABINOWITZ, M., DUMAS, M. B., and VALINSKY, D. **A two-stage optimization model for in-patient transfers.** *Operations Research*, Baltimore, 1976, Sept./Oct., vol. 24, no. 5, pp. 871-883.

A major problem in large hospitals is patient misplacement—the daily necessity of placing newly admitted patients in inappropriate beds because of varying demand, discharge patterns and medical requirements. It is highly desirable to relocate as many misplaced patients as possible. Usually, transfers are arranged by comparing bed vacancy lists with misplaced patient lists, a procedure that misses many transfer possibilities. Initially the problem was formulated as a linear programme, but because of problem size, solution on a daily basis was uneconomical. This difficulty was resolved by reformulating the problem as a two-stage model. Aggregation is used for the first stage, taking advantage of the special structure of this linear programme to form one of substantially reduced size. The second stage is a computerized search algorithm that disaggregates the first-stage optimal solution into the form required for its implementation by the hospital. A test run using actual hospital data demonstrated the model's effectiveness. Plans for implementation are discussed.

400. SWANSBURG, R. C. **Management of patient care services.** St. Louis, Mosby, 1976, ix, 414pp. £7.10

This book provides practical knowledge that will assist each nurse manager, whether ward sister or director of nursing, to meet the demands for managing constantly changing patient care services. It is a programmed learning or self-instruction manual

and has chapters on: theory of nursing management; planning and budgeting; organizing nursing services; leadership; motivation; decision-making; primary nursing; application of job standards; supervision; communications; nursing service policies; implementing planned change; in-service education; and evaluation of nursing services. A bibliography is included.

401. DAHLBERG, L. **A simple model for planning short-term in-patient medical care — applied.** *Applied Economics*, Andover, 1976, Dec., vol. 8, no. 4, pp. 235-248.

A model to be used for planning short-stay in-patient medical care is presented. The individual clinic is treated as a production unit which produces different kinds of treated cases with a given production technique (given production-cost-structure). The maximum number of treated cases are considered under: (i) the yearly demand in proportion to the population of the area served; (ii) the yearly budget; and (iii) the physical capacity of the clinics, measured by the number of beds. The model is applied to the clinic of general medicine, Lund Hospital, Sweden, using the estimated production-cost-structure. The type of information obtained from using this model is discussed. The method presented is only an approach and gives a fairly abstract picture of reality; these deficiencies must be considered when the model is applied. The model serves as a useful tool in decision-making although it may be limited in its application to general medical clinics.

402. NIJHUIS, H. De ontwikkeling van een meetinstrument voor verpleegkwaliteit. **[The development of an instrument for measuring the quality of nursing.]** *Ziekenhuis*, Utrecht, 1976, Nov. 3, vol. 6, no. 21, pp. 570-573.

To investigate the effectiveness of the organization of nursing units, it is important to find out to what extent nursing contributes to the patient's health; this is called 'nursing quality'. It should be clearly defined and distinguishable from other factors affecting the patient's health, such as medical treatment, the physician, the patient's family. It is influenced by variables, such as the number of staff per unit, their level of training, and the working environment. Nursing quality can be split into three dimensions: (i) continuity and co-ordination of care; (ii) the instrumental and technical aspects; and (iii) the psychological and sociological aspects. A list of criteria by which to judge each dimension has been drawn up, based on experiments abroad. Information was obtained from available administrative data, from questioning patients and staff, and from observation. Two examples are quoted. The method has been put into practice in an experiment on team nursing. The results will be tested for reliability and validity and further research is planned.

403. ANDERSON, O. W. **PSROs, the medical profession, and the public interest.** *Health and Society*, New York, 1976, vol. 54, no. 3, pp. 379-388.

The federal legislation mandating professional standards review organizations (PSRO) to monitor the decision-making of doctors regarding their patients has produced a method unique to the United States—to control medical care costs according to prevailing professional criteria. Dislike of highly structured delivery systems has moved the health services towards the direction of monitoring diagnostic and therapeutic decision-making. PSRO is mandated at a time when there is no systematic

methodology with validated criteria for monitoring medical practice, and consequently the system may be sabotaged by doctors on the unassailable reason that good patient care is being jeopardized. Little research has been carried out on the methodology of monitoring doctors' services, and it is up to medical schools to conduct research on methodology of monitoring services. An unfavourable side-effect of the legislation may be that criteria will be based exclusively on technical medical considerations and ignore the personal and social attributes of patients, with the result that medicine will become more technocratic, and patients will have less to say about decision-making. In other countries the idea of monitoring doctors is following the creation of organizational structures. All countries are examining the possibilities of monitoring doctors' decision-making and capping this off with arbitrary budget ceilings. The state of the art of health services management appears to permit no other system.

404. WALKLEY, P. H. **University hospital develops model quality assurance program.** *Hospitals*, Chicago, 1976, Sept. 16, vol. 50, no. 18, pp. 73-75.

The development of the quality assurance programme at University Hospital, Little Rock, Ark., is outlined. It is designed to accomplish two goals: (i) implementation of utilization review procedures for admission certification, concurrent length of stay review and discharge planning; and (ii) implementation of a medical audit procedure for identifying and correcting deficiencies in medical care. A registered nurse utilization review co-ordinator reviews admissions within one working day. Admissions which she questions are referred to a physician member of the utilization review committee. Those determined to be medically necessary are assigned a length of stay based on the 50th percentile of stay by diagnosis. The cases of most patients who stay past the 50th percentile of stay are reviewed initially by the co-ordinator, who may extend the stay to the 75th percentile. Any further extensions may only be granted by a physician member of the utilization review committee. Discharge planning involves early identification of the after-care services needed and arranging for them to be made available. A specially trained medical care evaluation assistant applies established criteria to a predetermined sample of medical records as the first step in the medical audit process. The physician audit group determines the importance of any deviations. Deficiencies are recorded and recommended follow-up actions stated.

DISCHARGE OF PATIENTS

See also Abstract Nos. 367, 371

405. AUKES, L. C. Ervaringen met ontslaggesprekken in het ziekenhuis. **[Experience with discharge discussion in the hospital.]** *Ziekenhuis*, Utrecht, 1976, Nov. 3, vol. 6, no. 21, pp. 574-578.

The author, a social psychologist, describes the experience gained from 111 discussions carried out by a member of the medical staff with patients (or children's parents) on their discharge from hospital. The aim of such discussions was to pay attention to the return from hospital to normal life, to spot dangers of discontinuity in after-care, to give patients an opportunity to ask questions, and to discuss their problems. The doctor was able to give information, short-term instruction, long-term

advice and reassurance. After some five weeks half the patients were asked, at home, for their opinion about the discussion. Most thought it an ordinary event they could expect. Success of the discussions depended largely on the co-operation and interest of the medical staff, perhaps stimulated by the author's research team. Departments had no wish to take over the initiative. Spotting discontinuity risks proved disappointing, perhaps due to the technique of questioning. Examples of questions are given.

HOME CARE, AFTER-CARE

See also Abstract Nos. 425, 449

406. HOLLAND, W. W. and GILDERDALE, S. **Medical care in the community: principles and policies.** *British Journal of Hospital Medicine*, London, 1976, Dec., vol. 16, no. 6, pp. 566-569.

There has been an increasing emphasis in the National Health Service on the health care of people within the community rather than apart from it. The reasons for this development are: (i) change in the pattern of diseases; (ii) change in the age balance of the population with a higher proportion of people in the over-75 age group; and (iii) the movement from large, impersonal institutions towards smaller units. Problems of care in the community fall into three categories: those concerning the patients and their families, those concerning the community, its facilities and attitudes, and those concerning the co-ordination between hospital and community. The case for community care is discussed in the light of several implications: the home care of severely disabled 'responaut' patients; early discharge from hospital after minor surgery; and control of moderately raised blood pressure. Four issues that need consideration are: (i) improvement of communication and co-ordination between hospital and community services; (ii) the need for more information about what services are available in different areas and for whom, and a willingness on the part of health and local authorities to review their priorities; (iii) the need to beware of accepting without evidence the assumption that community care is best; and (iv) the need for flexibility above all.

407. GERSON, L. W. and HUGHES, O. P. **A comparative study of the economics of home care.** *International Journal of Health Services*, Farmingdale, N.Y., 1976, vol. 6, no. 4, pp. 543-555.

The costs of home care and treatment solely in hospital for patients in a variety of short-term diagnostic categories were compared. A total of 583 patients included in an experimental home care programme were randomly assigned either to a group which received home care as part of their treatment, or to a control group that remained in hospital the traditional length of time. It is argued that the only costs relevant in an economic comparison of the two modes of care are those attributable to the direct care of the patient. A technique is presented whereby changes in the daily amount of nursing service provided can be costed. The economic analysis shows that, when similar diagnoses are compared for an episode of illness, there is basically no difference in cost between home care and treatment in hospital.

408. EICHHOLZ, H. Ambulante Pflege für Alte und Kranke: Wilhelmshavener Krankenhaus bietet Modell—Hilfe durch Funk. **[Home care for the elderly and the sick: a hospital at Wilhelmshaven provides help by radio.]** *Krankenhaus*, Stuttgart, 1976, Nov., vol. 68, no. 11, pp. 391-392.

St. Willehad Hospital, Wilhelmshaven, is operating with success a system which enables the elderly or those needing care to keep in touch with the hospital by radio. By pressing a button in their own homes a sign is illuminated on a board in the hospital control centre which indicates that they need help: by pressing another button the patient can indicate that all is well with him. The control centre also records when no signal has been received over a certain period. Where necessary a motor vehicle equipped with radio is sent to the patient's home. The system is manned by part-time workers, most of whom are paid. The patient remains under the general care of his own doctor and it is often possible to discharge patients from hospital earlier or to obviate the need for admission.

SPECIAL DEPARTMENTS

WARDS

See Abstract Nos. 357, 363, 400

OPERATING SUITES

See also Abstract No. 385

409. DAVENPORT, H. T. and others. **Measurement and reduction of occupational exposure to inhaled anaesthetics.** *British Medical Journal*, London, 1976, Nov. 20, vol. ii, pp. 1219-1221.

The occupational exposure of hospital staff at Northwick Park Hospital, Harrow, Middx., to inhaled anaesthetics was investigated using a personal sampling device that provided a measure of the average concentrations breathed by a person over a period of time, as distinct from the spot sampling in the general environment. The anaesthetist's average exposure to nitrous oxide and halothane during complete operating sessions was twice that expected from simple dilution of the escaping gases by the operating room ventilation. The advantages of using the integrated personal sampling system are outlined. The system was also used to evaluate the effect of redirection of the waste gas outflow and active scavenging connected to the piped vacuum system. Short-period studies under controlled conditions in the operating theatres and anaesthesia induction rooms showed that the anaesthetist's exposure could be reduced two- to four-fold by redirecting the outflow and another four- to six-fold by active scavenging. Exposures during complete operating sessions were reduced two- to seven-fold by scavenging. The precautions taken in the operating theatres require no change in anaesthetic methods.

410. SCHÖNTUBE, E. and others. Ein Laborgerät zum Kontinuierlichen Nachweis von Halothan-Arbeitsplatzkonzentrationen im Operationssaal. [A **laboratory instrument for continuous detection of halothane concentration in operating theatres.**] *Zeitschrift für die gesamte Hygiene und ihre Grenzgebiete*, Berlin, 1976, vol. 22, no. 5, pp. 318-325.

Apparatus for the detection, measurement and recording of halothane in the air of operating theatres is described and illustrated. It operates continuously on the aerosol ionization gas analysis principle. With reproducibility of ±5.00 per cent it meets all requirements and is suited to calculating acceptable maximum concentrations and for monitoring purposes.

411. MAINLAND, J. F. and DUDLEY, H. A. F. editors. **Safety in the operating theatre.** London, Edward Arnold, for Royal Australasian College of Surgeons, vii, 167pp. £29.50

In 1971 the Royal Australasian College of Surgeons conducted a symposium on safety in the operating theatre. Much research was collated and documentation prepared for discussion, finding final expression in this volume. Research carried out since then has been included. There are chapters on: staffing and responsibilities; patient handling; theatre design; anaesthetic equipment; asepsis in the operating theatre; instruments, packs and tubes; drugs and infusions; electrical equipment—fires and explosions; and forward planning and recommendations. Photographs and diagrams are included.

ANAESTHESIA

412. SEED, R. F., and WELSH, E. A. **Anaesthetic records in Great Britain and Ireland.** *Anaesthesia*, Oxford, 1976, Nov., vol. 31, no. 9, pp. 1199-1210.

A questionnaire on the use of anaesthetic records was completed by 294 of the 400 anaesthetists in Great Britain and Ireland to whom it was sent; 186 of the correspondents sent one or more copies of the anaesthetic records used in their hospital or group. An analysis of the record sheets showed that, although many features were similar, important aspects were omitted in some, while others had too many options which were not necessarily relevant to the administration of an anaesthetic. The results of the analysis are summarized in tables and discussed. No attempt is made to offer an ideal design for an anaesthetic record, but the information may assist those anaesthetists wishing to change the current practice in their hospital or group.

PHARMACY

See also Abstract Nos. 313, 381

413. HART, R. J. and MARSHALL, F. S. V. **Wastage of pharmaceuticals.** *Lancet*, London, 1976, Dec. 4, vol. ii, pp. 1239-1240.

Wastage of pharmaceuticals was studied for three months at a 520-bed hospital in Suffolk. Over the survey period 1,000 items consisting of 40,000 tablets and capsules

and 650 injections totalling £1,104 were brought to the pharmacy for destruction. Only £40 worth could be put back into stock. A national figure of £1,150,000 was estimated assuming that the cost rises in direct proportion to the number of beds served. Antibiotics were potentially a major source of waste, 10 per cent of antibacterials were returned which were worth nearly 20 per cent of the original total value of such drugs. Preparations which had reached their expiry date accounted for 36 per cent of the total waste bill. Over 20 per cent of labels were unsatisfactory. It is suggested that the use of blister-packaging together with conservative prescribing and supply, and suitable storage of medicines could lead to important savings of drugs discarded each year. Typewritten instructions should also be encouraged, together with a date of issue on the label.

414. SKAGGS, C. O. and JONES, J. H. **Establishing modern pharmacy service in a large mental hospital.** *Hospital Pharmacy*, Philadelphia, 1976, Sept., vol. 11, no. 9, pp. 352, 355-357, 360-361.

The pharmacy at the 2,500-bed Florida State Hospital, Chattahoochee, moved into redesigned premises in October 1975. The main pharmacy has an area of 5,300 square feet on the second floor, with dock and storage facilities covering 850 square feet on the first floor. After the move a unit dose system was instituted following a pilot experiment on one patient unit and it now serves about 1,300 patients in eight units. A medical administration record (MAR) for each patient is kept in a loose-leaf binder on the unit dose trolley in the ward. The master medical profiles (MMP) are kept in the same type of binder in the pharmacy. When a physician makes a new order, a copy is taken with the patient's MAR to the pharmacy. The pharmacy makes the necessary entries on the MAR and MMP and dispenses sufficient of the drug to last until the next trolley fill. The specially designed unit dose trolleys are replaced on a seven-day rotation. Details are given of the procedures followed and of the phased implementation of the system. A clinical pharmacist is assigned to some of the patient units. The pharmacy also has six salaried intern positions by arrangement with two schools of pharmacy.

415. CLASEN, T. E. and POST, G. E. **Evaluation by physicians of a pharmacy newsletter.** *Hospital Pharmacy*, Philadelphia, 1976, Sept., vol. 11, no. 9, pp. 370-371.

A pharmacy newsletter was begun in the pharmacy department of Wood Veterans Administration Hospital, Milwaukee, Wis., with the aim of improving communication between medical, nursing and administrative staff as well as public relations for the department. A survey carried out eight months after the first monthly issue of the newsletter produced a favourable evaluation. The results indicated sufficient interest in and usefulness of the newsletter to continue including material geared for staff physicians in the monthly newsletter. The survey indicated interest in summaries of journal articles, adverse drug reaction material, drug interaction information, formulary actions, drug evaluations and pharmacy policies in that order.

416. RESMAN, B. H. and MCCLEOD, D. C. **A drug experience registry.** *American Journal of Hospital Pharmacy*, Washington, 1976, Oct., vol. 33, no. 10, pp. 1051-1053.

The drug experience registry is a system for the recording and filing of drug-related patient events in a readily retrievable form. The purpose of the registry is to accumulate information on adverse drug reactions, unusual therapeutic successes and failures and

any other drug experiences that may be useful for education, research or for developing rational drug therapy. The registry is in two sections: the clinical event file and the drug file. Information is supplied by the pharmacists associated with the State University of New York at Buffalo School of Pharmacy's clinical teaching scheme. Information is recorded on case-report forms filed in the clinical event file, together with synopses of literature that serve as guides in evaluating the situation and determining the correct treatment. The drug file serves as a cross reference to the clinical event file. Both files contain sufficient information to permit later retrieval of additional information if required. The registry enhances drug-awareness, can help in decision-making and may also suggest areas of possible research.

417. HULSE, R. K. and others. **Computerized medication monitoring system.** *American Journal of Hospital Pharmacy*, Washington, 1976, Oct., vol. 33, no. 10, pp. 1061-1064.

A computerized drug monitoring system for alerting and warning of potential adverse drug reations is described. The Latter-Day Saints Hospital, Salt Lake City, Utah, has a clinical computer system which gathers information from many areas to form a broad patient data base. The system integrates the information and returns warning messages and suggestions regarding patient drug therapy to the pharmacist. The system uses the HELP (Health Evaluation through Logical Processing) program to allow experts in a medical specialty to define the criteria for medical decision-making. The broad base and flexibility of HELP permits complete drug monitoring. When a warning message is received the pharmacist contacts the doctor or the nursing staff and explains the potential situation. Prescription labels and patient drug profiles are also produced by the system. There are 149 drug-monitoring HELP systems in use. The results of the data collected indicate that five per cent of patients monitored have had drug alerts; of these 44.9 per cent were drug-laboratory contraindications and only 28.9 per cent drug-drug interactions. Of the 690 alerts received 77 per cent resulted in a doctor altering the patient's treatment. The system makes the pharmacist more efficient and accurate in monitoring patient drug therapy and warns of potential problems more quickly than manual monitoring techniques.

418. JOHNSON, C. E. and SLOTFELDT, M. H. **Organizing patient data for use in clinical pharmacy practice and education.** *American Journal of Hospital Pharmacy*, Washington, 1976, Oct., vol. 33, no. 10, pp. 1020-1022.

A simple, low-cost manual data retrieval system, which provides selective access to all patient cases monitoring by pharmacists, is described. Selected data are recorded on a notched card coded by clinical descriptors. The codes are based on a modification of the International Classification of Diseases, Adapted, disease-diagnosis, coding system used in medical record departments. The method of retrieval of information is discussed. The advantages of the system are: (i) help in recording and retrieving patient information; (ii) eliminates the need for cross files or multiple records on a single patient; (iii) the cards are easy to use; (iv) flexible and economical system; and (v) easily converted to a computer-based system. The records can be easily monitored and reviewed according to the policies and procedures for clinical pharmacy practice in the hospital.

LABORATORIES

419. GRÄSER, W. Realisierung der Labordatenverarbeitung auf der Basis koordinierter Datenerfassungseinheiten. **[Computerization of laboratory data processing on the basis of co-ordinated data holding units.]** *Krankenhausarzt*, Karlsruhe, 1976, Nov., vol. 49, no. 11, pp. 743-744, 746-750.

An on-line electronic data processing system, the WANG 2200, suitable for independent clinical laboratories or for small- or medium-sized hospital laboratories, is described and illustrated. Details are given of the hardware ano software and of the work flow sequence. Specimen printouts are shown.

420. KELLER, H. Konzepte computer-unterstützter klinischer Laboratorien. **[Concepts of computer-based clinical laboratories.]** *Krankenhausarzt*, Karlsruhe, 1976, Nov., vol. 49, no. 11, pp. 713-714, 716, 718-719.

The author presents a general survey, with 40 references to the literature, of electronic data processing in the clinical laboratory. The present position is discussed under three main heads: the general objectives; the effect of the special needs and conditions of a clinical laboratory on the feasibility of a computer installation; and aids and recommendations for planning computer processing. Three possible methods (linking with a central computer, installing a minicomputer or a small computer in the laboratory, or the installation by the suppliers of a complete *ad hoc* system) are discussed and their advantages and disadvantages set out. Provision must be made for the continuation of laboratory work should a breakdown in the system occur.

421. OTTEN, J. and HEU, R. Realisierung der Labordatenverarbeitung für das zentrale klinische Routinelaboratorium. **[Computerization of data processing in the central routine laboratory.]** *Krankenhausarzt*, Karlsruhe, 1976, Nov., vol. 49, no. 11, pp. 752, 754, 756.

An electronic data processing system suitable for use in central routine clinical laboratories is described. This is the LABOSYS system which is based on the principle of 'divided information' whereby the three separate areas of adaptation of apparatus, collection of data, and administration of data are processed in independent systems. Although this method is hardware-intensive the fact that hardware costs are falling while software is continuously increasing in price must be borne in mind. The use of standardized software keeps the cost within reasonable limits. In the administration of data section the Massachusetts General Hospital Utility Multi Programming System (MUMPS) is used and this provides the necessary flexibility.

422. PIGORS, R. Grundzüge der EDV-Anwendung im klinischen Laboratorium. **[Characteristics of the use of electronic data processing in clinical laboratories.]** *Krankenhausarzt*, Karlsruhe, 1976, Nov., vol. 49, no. 11, pp. 721-722, 725-727, 730, 732.

Electronic data processing in the clinical laboratory greatly improves communication within the laboratory and between clinical departments and the laboratory. This paper discusses the basic principles of electronic data processing in the laboratory from the point of view of information flow and information processing. In addition to an analysis

of the special problems in the laboratory the main characteristics, as well as the possibilities and limitations, of a laboratory electronic data processing system are discussed.

DIAGNOSTIC X-RAY DEPARTMENT

See also Abstract No. 314

423. VERKASALO, E. Röntgenlaboratorioiden toiminnan tehostaminen tarkoituksenmukaisella järjestelmä-ja laitesuunnittelulla. **[Increasing the efficiency of diagnostic X-ray departments by proper planning of the system and the equipment.]** *Sairaala*, Helsinki, 1976, Oct., vol. 39, no. 10, pp. 366-368.

This paper examines steps which have been or can be taken to increase the efficiency of diagnostic X-ray departments. These include: (i) planning the diagnostic X-ray system as a whole; (ii) analysing the costs of equipment, with particular reference to the effects on them of purchase price, life span, stoppages in use, maintenance and simplicity of use; (iii) quality control; (iv) improved ease of use of equipment; (v) maintenance; (vi) staff protection and patient safety; (vii) collection of information needed for administrative or medical use; (viii) guaranteeing the continuous use of equipment; and (ix) use of the Valmet X-ray equipment system.

RADIOISOTOPE DEPARTMENT

424. STRAW, J. D., BENEDETTO, A. R. and NUSYNOWITZ, M. L. **A simplified radiopharmaceutical accountability record-keeping system.** *Journal of Nuclear Medicine*, New York, 1976, Nov., vol. 17, no. 11, pp. 1015-1016.

This paper describes a comprehensive system which ensures that a patient receives the proper radiopharmaceutical dose and that records of accountability are conveniently maintained. A radiopharmacy assay/utilization record serves as the control document for source products and derived new products. Colour-coded numbered labels are used to maintain accountability among source products, derived products, prescriptions, log books and patient doses. These measures have proved effective in simplifying documentation, minimizing dose administration errors and providing for radiopharmaceutical accountability. A sample record is reproduced.

REHABILITATION

425. FIRTH, D., WRIGHT, V. and CHAMBERLAIN, M. A. **The assessment of the value of health visitors in the rehabilitation team.** *Rheumatology and Rehabilitation*, London, 1976, Aug., vol. 15, no. 3, pp. 188-190.

A study was carried out to evaluate the use of health visitors in the hospital rehabilitation team, to document the value of bridging the gap between hospital and home and to study the effects of health visitor support at home. Two health visitors were attached to the rehabilitation team at the Ida and Robert Arthington Hospital, Leeds, assisting at ward rounds and case conferences. Two studies were carried out of patients discharged from the hospital, who were observed during their convalescence

and at home. The services required by the patients were evaluated during group discussion. The liaison between the health visitor in the community and the health visitor in the hospital service proved to be of considerable value. No longer was contact lost with patients and understanding of the problems faced by patients at home increased. Liaison has resulted in patients with serious illnesses still being able to play a useful part in the community, since without help and teamwork many of the patients would return very quickly to the already over-loaded hospital service.

PHYSIOTHERAPY DEPARTMENT

426. ANDERSON, L. R. **Standardization of the physical therapy record.** *Physical Therapy*, Washington, 1976, Aug., vol. 56, no. 8, pp. 911-913.

The question of where to begin the assessment of quality care in physiotherapy is examined. Caution should be exercised in developing patient care standards so that the standards will be based on valid data. A logical, organized patient record that reflects all that has been done for the patient is recommended. A standardized format to enhance patient care records is presented based on a rational system of problem-solving. Five categories of evaluation are included in each initial entry for all patients: (i) behaviour; (ii) joint evaluation; (iii) muscle/motor evaluation; (iv) respiratory evaluation; and (v) functional evaluation. The initial entry may also include other evaluations e.g. posture; skin; reflexes; prosthetic evaluation; orthotic evaluation; sensation; and oedema. The interim and discharge entries are outlined. The use of a standard format ensures the uniform organization of each entry. The standard format can also be used by other health care professionals.

DEPARTMENTS FOR SPECIAL THERAPY

See also Abstract Nos. 390, 435, 444

427. **In-patient arrangements: programmed investigation and treatment unit.** (Abstracts of Efficiency Studies in the National Health Service, No. 175) London, Her Majesty's Stationery Office, 1976, [3]pp. £0.25

A programmed investigation and treatment unit was established in the Manchester Royal Infirmary to accommodate patients requiring in-patient investigation and certain predictable courses of treatment. The aim of the unit is to: (i) reduce the waiting list for patients requiring in-patient investigation; (ii) reduce the length of stay of patients once they had been admitted for investigation; and (iii) to arrange admission for in-patient investigation at a time convenient to the patient. The preliminary work in setting up the unit is outlined. The methods and procedures outlined include requests for admission, scheduling of investigations and courses of treatment. The unit operates a five-day working week for 46 weeks of the year. Most patients arrive on Monday and some are able to leave on Wednesday or Thursday. Their places are taken by patients scheduled for a one- or two-day stay. The relationship with the patient's clinician is discussed together with the discharge procedure. The results indicate that the scheme has improved bed use: the average stay is now 2.8 days for a patient admitted for in-patient investigation. The waiting list has been reduced, the medical and nursing

staff have greater knowledge and experience in investigative procedures and the work load can be better organized. Both patients and staff accept the principle of planned admission with enthusiasm.

INTENSIVE CARE UNITS

428. RENOU, P. and others. **Controlled trial of fetal intensive care.** *American Journal of Obstetrics and Gynecology*, St. Louis, 1976, Oct. 15, vol. 126, no. 4, pp. 470-476.

A foetal intensive care unit was formed at the Queen Victoria Hospital, Melbourne, in 1972. Because of some doubt concerning the value of foetal intensive care, a controlled clinical trial including all high-risk patients was performed. The trial clearly showed that intensive care is associated with improved neurologic and biochemical status of the neonate; however, it is possible that this improvement results from the use of foetal diagnostic tests or some other factor associated with intensive care. Sufficient evidence was gathered to warrant the continuation of foetal intensive care in this hospital, but in other countries where funding is difficult to obtain, a controlled trial would appear to be justified.

SPECIAL HOSPITALS AND UNITS

OUT-PATIENT

See also Abstract Nos. 339, 372, 436, 437, 439, 445, 446

429. FOSS, P. O. Et somatisk og funksjonelt løsningsaltornativ ved etablering og drift av en somatisk sykehuspoliklinikk. **[An alternative functional solution for the establishment and management of a general hospital polyclinic.]** *Sykehuset*, Oslo, 1976, vol. 39, no. 6, pp. 347-353.

The requirements for providing effective polyclinic services at a general hospital are: (i) a clearly defined catchment area; (ii) the hospital's total responsibility for the service required; (iii) a satisfactory primary health service; (iv) separate accommodation; (v) sufficient medical equipment; (vi) adequate staff and office resources; (vii) available laboratory facilities, and (viii) 'hotel' department for self-help patients. Patients are referred by the doctor in the same way as for general admissions. A programme of tests is devised on the basis of the letter of referral. An appointment system is necessary, with a fixed duty roster for the staff, so that the patient always sees the same doctor. Figures are presented analysing one year's in-patients and polyclinic patients at Innherred Hospital, 34,130 in all. In the fields of medicine, rheumatology, neurology and paediatrics, the number of check-ups (1,060 in all) was double that of the number of patients referred by doctors (567). Only 15 of the 1,627 patients seen polyclinically required hospitalization.

430. VOGEL, L. C. and others. **Operational study of the outpatient department at the government hospital at Kiambu, Kenya.** *East African Medical Journal*, Nairobi, 1976, March, vol. 53, no. 3, pp. 168-186.

As part of an operational research project in a new out-patient department at

Government Hospital, Kiambu, Kenya, studies were carried out with the aim of improving services and reducing queuing and waiting times while maintaining a certain standard of care. Several modifications were introduced in the organization, staffing pattern and task allocations at several units. The aspects of the services that could and should be controlled are discussed. The most important factors determining the flow of patients are: (i) time of arrival; (ii) time the casualty officers start work; (iii) output rate of the casualty officers; (iv) input and output rates at stations downstream. The need for discussions with hospital architects in order to prevent the situation where the organization and staff adapt themselves to the building, rather than the other way round is considered.

CASUALTY AND ACCIDENT

See Abstract No. 309

DAY HOSPITALS

See Abstract No. 447

CHILDREN

See also Abstract No. 381

431. GREAT BRITAIN. DEPARTMENT OF HEALTH AND SOCIAL SECURITY, DEPARTMENT OF EDUCATION AND SCIENCE and WELSH OFFICE. **Fit for the future: report of the Committee on Child Health Services (Chairman: S. D. M. Court). (Cmnd. 6684)** London, Her Majesty's Stationery Office, 1976, 448, 222pp. £10.50

The Committee was appointed to review the existing health services for children, to judge how effective they are for the child and his parents, and to propose what the new integrated child health service should try to achieve and how it should, therefore, be organized and staffed. The first of these two volumes contains the Committee's report and the second is a statistical appendix. Following an introduction, which speaks of needs and values in a changing society and of our response, the report is in four parts. Part I examines continuity and change in children and their families, in the picture of health and disease and in the available services and how other countries are facing similar needs and opportunities. It ends with a description of the objectives and structure of an integrated service which could meet contemporary needs more effectively. Part II examines the needs of defined areas of child development and childhood illnesses more closely, to establish whether these particular needs could be met by the type of service proposed in Part I. Part III describes the professional and administrative structure required for this integrated service for all children. The Committee's conclusions and recommendations are summarized in Part IV.

432. LEYLAND, S. J. **Special playgroups in an assessment centre.** *Nursing Times*, London, 1976, Nov. 18, vol. 72, no. 46, pp. 1815-1817.

The Wilfrid Sheldon Paediatric Assessment Centre, Belgrave Hospital for Children, London, deals with children who have neurological disorders, mental handicap,

language delay or learning difficulties. The majority of the patients come from the Lambeth, Southwark and Lewisham areas with poor housing, overcrowding and a high immigrant population. Since 1974 special playgroups have been held in the assessment centre for those children who would benefit from supervised play in conjunction with physiotherapy or speech therapy. Three playgroup sessions are held weekly, each session lasting two hours. Parents are encouraged to participate. The room used is on the ground floor of the assessment centre, and is decorated with mobiles and the children's paintings. Equipment consists mainly of toys that most parents can afford. A reception centre next door has large mobile toys, and facilities for sand and water play. Six is the maximum number of children in each group. The reactions of various children to the playgroups are discussed. There is close liaison with health visitors and community health teams and the playgroups have proved a valuable feature of the assessment clinic facilities.

GERIATRICS AND LONG-STAY

See also Abstract Nos. 316, 317, 352, 408, 448, 449

433. ROSIN, A. J. and others. **What is the function of a hospital for geriatric and chronic diseases?** *Journal of the American Geriatrics Society*, New York, 1976, Sept., vol. 24, no. 9, pp. 415-422.

The organization of a hospital for geriatric and chronic diseases was examined in terms of the type of patient referred, the course in the hospital and the eventual result, in a prospective study of a year's admissions to one department of Harzfeld Hospital, Israel. The pattern of geriatric care is compared with that in Great Britain. Of 191 patients admitted, 55 per cent were assessed as possible candidates for rehabilitation, and two-thirds were discharged. The average length of stay was 68 days for the 47 per cent who were discharged and 95 days for the 45 per cent who died; 8.4 per cent remained as long-stay patients. The possibility of release from the hospital was influenced by the degree of disability rather than the social circumstances. The best chance for improvement was among those patients who needed only partial help on admission. The most important tasks of the hospital were: intensive and sometimes prolonged rehabilitation; basic nursing care; medical re-evaluation and referral for surgery; acute and subacute medical problems; and the concentration of physiotherapy and occupational therapy where most needed. There is close co-operation between patients, staff and relatives in the rehabilitation process. The problem of defining the purpose of the hospital lies in distinguishing between the patient requiring prolonged care and the patient requiring custodial care in a nursing home. The demands for medical treatment were such as to require most of the facilities of a general hospital, and reveal the sophistication in diagnosis and assessment required for the type of patient usually seen in the geriatric or chronic disease hospital.

434. BROWN, H. J. and SUTCLIFFE, R. L. G. **Favell House: a young disabled unit.** *Practitioner*, London, 1976, Nov., vol. 217, no. 1301, pp. 773-776, 779-782.

This specially built unit for 20 young disabled patients in Northampton is intended as a home offering medical and nursing support, not as a hospital disguised as a home. One wing of the L-shaped unit is used by residents: the other is shared by resident and

day patients and contains work rooms and a communal day/dining area. The centre section contains kitchen, clinical room, utility/sluice rooms and the sister's office. Special consideration was given to sound proofing, strengthening the ceilings for hoist facilities, use of connecting single rooms, and flexibility in the use of resident and day accommodation. The staffing quota of the unit is outlined. There are usually three main groups of patients requiring care: (i) those in whom the disease is progressive; (ii) those in whom the disease is not progressive but the deficiency is severe; and (iii) those who may return ultimately to a useful job. Activities include light crafts, gardening, typing and production of a bi-monthly newsletter. During the first year there was a 62 per cent occupancy rate, and the average age of the patients was 44 years (range 17 to 59). The attendance of six day patients daily from Monday to Friday has improved morale. Disadvantages in the design and function of the building are discussed.

UROLOGY

435. La néphrologie. **[Nephrology.]** *Hôpital à Paris*, Paris, 1976, Sept./Oct., no. 35, pp. 389-496.

This special issue on services for patients with renal disease includes papers on: the organization of a nephrology service; the nephrology service in a university hospital centre; renal insufficiency and its treatment; diagnosis and treatment of renal diseases in the out-patient department, day hospital and in-patient unit; paediatric nephrology; organizational problems of modern hospital nephrology; nephrology and medical education; reflections on nephrology within the Paris public hospital system; and conclusions and proposals.

SURGERY

See also Abstract Nos. 338, 367, 439

436. SIMPSON, J. E. P. **Medical care in the community: day care surgery.** *British Journal of Hospital Medicine*, London, 1976, Dec., vol. 16, no. 6, pp. 571-574, 577-578.

The development of day bed care and day surgery from its inception in 1899 to the present day is discussed. The standards and criteria found necessary for care were explained in part by the varying mortality and admission rates between teaching and non-teaching hospitals. These principles were expanded to include the social, financial and administrative components of care, and although applied in many specialist fields were also applied to day care and short-stay surgery. The clinical policy in short-stay surgery covering the range of work, possible complications, effects of anaesthesia and analgesia, together with the removal of the sutures, is discussed. The organization and decisions taken for the individual patient are considered in the light of the assessment of the surgery, communication, design of the unit, implications of day care and social and economic implications. Unfortunately the organization of a day unit in practice indicates a technology being applied in the absence of personal concern by people identified more by rank than by name. The key words in the overall development of day surgery must be balance, control and provision rather than merely speed, otherwise patients will receive a second-rate service from exhausted staff.

437. WELTMANN, A. J. **Maybe you can't afford a short-stay surgical center.** *Hospital Financial Management*, Chicago, 1976, Oct., vol. 30, no. 10, pp. 32-36.

It is claimed that out-patient surgical centres will lower the cost of medical care, add to the convenience of patients, allow more flexible scheduling, and respond better to the needs of the individual and the community. Hospitals planning such centres will need to consider four factors: total community cost, meeting planning agency requirements, charges to be made, and financial considerations. Each of these is discussed. Establishing such a centre is justifiable only when it can be shown that it will bring an overall decrease in the total unit cost of health care to the community itself. Planning agency approval will not be given unless the need for additional services can be demonstrated; the factors to be taken into consideration are discussed. When the demand for the centre has been determined, the next question that must be dealt with is whether adequate revenues can be obtained for services rendered. A direct cost accounting system is particularly useful in measuring cost effectiveness in out-patient surgical centres. If a hospital can open a centre with a small direct cost outlay and incur no significant increase in fixed costs, then the centre might generate sufficient excess revenues over direct costs to cover general hospital overheads that have not been fully absorbed by other departments.

MATERNITY

See also Abstract Nos. 388, 428

438. HATHERLEY, L. I., and BREHENY, J. E. **Herpes simplex virus—an obstetric hospital problem.** *Medical Journal of Australia*, Glebe, 1976, Sept. 11, vol. 2, no. 11, pp. 401-403.

The incidence of morbidity from herpes simplex virus (HSV) among nurses of Mary Maternity Hospital, Melbourne, was examined. The results indicated that the distribution of perioral herpes during the year is too erratic to permit disruptive incidences to be anticipated. The time lost from rostered duty owing to herpes was compared with total sick leave taken by the nurses from all other causes. During 1971 to 1974, 312.9 days were lost from rostered duty by nurses with herpes. The purpose of excluding staff with facial herpes is to protect babies from a source of potentially lethal infection. During the time the hospital has been open no cases of HSV infection occurred among babies born at the hospital and this may be due to the stringent precautions applied, to low infectivity or to low susceptibility. The survey of time lost from work indicates the need for investigation into several areas of infection control in relation to herpetic lesions before the decision to exclude nursing staff from duties of patient care can be maintained or modified. There is little published work relating to immunity and epidemiology of HSV infections in Australia and a local study appears to be necessary.

GYNAECOLOGY

439. SINGLETON, V. **Division of labour.** *Nursing Mirror*, Sutton, Surrey, 1976, Nov. 25, vol. 143, no. 22, pp. 69-70.

Minoprio Ward, Women's Hospital, Liverpool, was opened as a day care ward as part of a professorial gynaecology unit in 1975. The ward accepts all minor investiga-

tions and therapy which can be treated on a day care basis. The unit also comprises two other wards at Liverpool Royal Infirmary dealing with all in-patient major therapy. The purpose in establishing this unit was to convert three wards in two hospitals into one co-ordinated gynaecology unit staffed by one medical team. The physical layout of the day care ward had to be adapted to meet the needs of a self-contained investigative unit. Bed complement was reduced from 20 to 12. The admission procedures are discussed together with the appointments system. Delays may occur in forwarding photostated notes between wards which may mean that the patient has made contact with her ward before her notes arrive. All case notes of patients currently under investigation are filed on the ward. Future developments will include more procedures being carried out on a day care basis. The main bulk of the work at first was in infertility investigations, but now minor procedures under general anaesthesia are carried out. All staff take an active interest in research and there is good communication between the wards.

PSYCHIATRY

See also Abstract Nos. 316, 317, 353, 414

440. BLUGLASS, R. **The design of security units: the type of patient and behaviour patterns.** *Hospital Engineering*, London, 1976, Nov., vol. 30, pp. 5-7.

The hospital care of the mentally disordered patient has altered considerably in Great Britain over the past 20 years. Changes in methods and philosophy, increase in staff, improved treatment and new drugs have resulted in increasing numbers of patients returning to the community. A relatively small number of patients present more difficult problems of behaviour as a result of their illness or personality structure, and for these open-door wards or treatment in a district general hospital are unsuitable. A number have been accepted by the Special Hospitals, Broadmoor, Rampton, Moss Side and Park Lane. Proposals for the provision of special units on a regional basis designed to provide greater security and control than existing hospitals have been put forward. The provision of such a service for medium-stay patients must be planned as part of a total community service with mutual support from other hospitals and units. The categories and types of patients who might be expected are considered. A variety of treatment programmes should be constructed. The need for accommodation and facilities for assessment procedures is important. These units will offer the possibility of developing experimental methods of management, comparing treatment methods and monitoring the regimes and management. There is no established unit to serve as a model for the range of behavioural problems and patterns likely to arise and consequently the first units will provide a challenge to designers and planners in the National Health Service.

441. **A program for the prevention and management of disturbed behavior.** *Hospital and Community Psychiatry*, Washington, 1976, Oct., vol. 27, no. 10, pp. 724-727.

A hospital training scheme to help staff with the prevention and management of disturbed behaviour of patients was established at St. Thomas Psychiatric Hospital, Ont. The staff development department set up the first part of the training scheme in January 1974. All staff were encouraged to attend a series of lectures that emphasized the predictability and preventability of most disturbed behaviour. For the second part

of the scheme a teaching package was established consisting of a videotape cassette and a workbook describing ways of predicting, preventing and dealing with disturbed behaviour if it occurred. Responsibility for administering the various aspects of the scheme lies with the clinical teams, the committee for the management of disturbed behaviour, the staff development department and the patients. Patients can now express their comments and criticisms of treatment through a variety of methods ensuring that neither their rights nor those of the staff are abrogated. An analysis of hospital statistics for 1974 and 1975 indicates that in 1975 there was a decrease in disturbed behaviour, patient injuries, and staff injuries directly related to patients and in the total man hours lost.

442. TODD, N. A., BENNIE, E. H. and CARLISLE, J. M. **Some features of new long-stay male schizophrenics.** *British Journal of Psychiatry*, London, 1976, Nov., vol. 129, pp. 424-427.

From an original cohort of 471 admissions of male schizophrenics (260 individuals) to Leverndale Hospital, Glasgow, between 1967-70, 39 patients were found who in December 1973 had become long-term residents by virtue of over three years' stay. These patients were studied, but of the 39 only 33 remained in hospital in December 1975. The current state of the patients is discussed, together with the duration of illness, number of previous admissions, legal status, clinical state, management and accommodation, treatment, occupational grade, marital status and relevant social circumstances. It is concluded that these patients represent a hard core and that very few of them are likely to be suitable for such alternative forms of care as are now available.

443. AHMED, M. B. and KOLTUV, M. **Evaluation of an inpatient service by consumer feedback.** *Australian and New Zealand Journal of Psychiatry*, 1976, Sept., vol. 10, no. 3, pp. 263-268.

The Sound View-Throgs Neck Community Mental Health Center, N.Y., has conducted a number of studies of client satisfaction. The findings suggest that the majority of patients are generally satisfied with the help they receive although the level of satisfaction depends on specific aspects or features of the treatment being evaluated as well as the unit providing the services. The results revealed that there is relatively greater dissatisfaction with: privacy on the ward; the availability of the hospital and medical staff; the doctor's understanding of the patient; and the evening recreation programme. Some element of dehumanization was also experienced. The benefits that can be derived from this type of a survey are discussed. Some of the 'minor' complaints can be readily resolved. Patient feedback can be useful in assessing the results of treatment and it can help in establishing policies for admission, treatment and discharge. The use of such studies of treatment followed by an opportunity for evaluation by patients after discharge promotes both more effective care and improved human relations.

444. WOODSIDE, M. and others. **Experiment in managing sociopathic behaviour disorders.** *British Medical Journal*, London, 1976, Oct. 30, vol. ii, pp. 1056-1059.

A ward at the Royal Edinburgh Hospital, catering for patients of both sexes, admitted patients with aggressive, suicidal or otherwise disturbed behaviour for

observation and treatment until decisions could be made about their long-term needs. Patients were referred from the police, special hospitals and the courts and some were transferred from other wards in the hospital. A third of the first 100 patients were admitted for forensic reasons. Alcoholism was the primary diagnosis in nine patients and secondary diagnosis in eight. Twelve inmates were discharged to long-stay accommodation for disturbed patients. The ward is a medium secure unit providing beds for 11 men and eight women and is staffed by three charge nurses, five staff nurses and three enrolled nurses; the remaining six to eight members of staff are senior students and nursing assistants. The ward policies and treatment programme, staff meetings and ward management are discussed. The objective of accepting all the requests for forensic psychiatric services was met and the unit has secured its status within the hospital and will continue with the active support of the hospital staff.

445. HAUG, J. O. Et praktisk og funksjonelt løsningsalternativ ved etablering og drift av en psykiatrisk sykehuspoliklinikk. **[A practical and functional alternative solution for the establishment and management of a psychiatric hospital polyclinic.]** *Sykehuset*, Oslo, 1976, vol. 39, no. 6, pp.353-364.

There are four independent psychiatric polyclinics in Norway, three of which are associated with hospital departments nearby. The psychiatric clinic at Østfold Central Hospital, Frederikstad, was reorganized in 1970 and moved into its own block, in which it was possible to set up an integrated polyclinic service. The psychiatric service available to adults in the county of Østfold comprises: (i) a 450-bed psychiatric hospital, whose out-patient activities are confined to after-care; (ii) the psychiatric wards at the Central Hospital, where there are facilities for day care; and (iii) the Blue Cross alcoholics aid organization. There are no full-time psychiatrists in private practice. Østfold is a small, densely populated county with 230,000 inhabitants. In 1974 the 60-bed psychiatric wards had 578 admissions, with an average bed occupancy of 91 per cent. Extramurally, there were 455 first-time out-patient visits and some 4,000 out-patient consultations. One must not assume that extended polyclinic activity results in a reduced requirement for beds: it *does* result in the right patients being admitted earlier, and waiting lists being reduced. In a similar, independent institution, admitting 550 new patients a year, there is an established staff of three doctors and two psychiatrists, whilst Østfold has no establishment or funds for its polyclinic activity, yet provides the same service. Planning should be based on an expected four new patients (or 20 to 30 visits in all) per 100 of the population. The advantages of integrated extra- and intramural activities are: (i) co-ordination of responsibility; (ii) adequate provision for the individual patient; (iii) continuous chain of treatment; (iv) rationalization; (v) a common information bank; and (vi) improved training facilities.

446. LEHOLT, T. Løsningsalternativer i forbindelse med sykehuspoliklinikker. **[Alternative designs for hospital polyclinics.]** *Sykehuset*, Oslo, 1976, vol. 39, no. 6, pp. 322-346.

Few Norwegian hospitals are currently able to offer a fully satisfactory psychiatric service, because of lack of staff, lack of accommodation, the organization and opening times of the polyclinic services, and the rising demand. The accommodation made available must be adequate to cover the polyclinic services provided. For polyclinics up to a certain size, the examination and treatment rooms are also used by in-patients

and must be designed and equipped for general use. Questions which must be answered when planning projects of this nature include: (i) is there a reasonable relationship between the hospital's catchment area, primary health service and number of polyclinic consultations for which the department is designed (e.g. both Harstad (pop. 36,000) and Moss (pop. 55,000) expect between 15,000 and 25,000 consultations a year, whilst Sogn Hospital (pop. 100,000) expects 60,000 to 70,000; (ii) is there a reasonable relationship between the area projected and service to be provided; and (iii) is the polyclinic designed administratively and constructionally in order to use the staff capacity to the maximum? In general, we know too little about these factors at the present time to be able to answer any of the questions accurately. The paper is illustrated with plans of eight polyclinics and a flow chart for polyclinic services.

447. ANDREINI, A. Nuovi trends nel servizio di assistenza psichiatrica: l'ospedale diurno. **[New trends in psychiatric services: the day hospital.]** *Tecnica Ospedaliera*, Milano, 1976, Sept., vol. 6, no. 9, pp. 19-38.

This wide-ranging discussion of the concept of the day hospital for psychiatric patients examines: its social, economic, medical, and functional advantages and disadvantages; selection of patients; and classification according to whether the hospital is administratively and/or physically independent or dependent on a psychiatric hospital or psychiatric department of a general hospital. The best type for Italian purposes would be a day hospital attached to the psychiatric department of a general hospital. The day hospital attached to the department of psychiatry, Lister Hospital, Stevenage, England, is described, with plans and photographs.

448. JOLLEY, D. J. and ARIE, T. **Psychiatric service for the elderly: how many beds?** *British Journal of Psychiatry*, London, 1976, Nov., vol. 129, pp. 418-423.

A five-year study of bed use in the Goodmayes Psychiatric Unit for Old People was carried out to establish whether the present bed complement is likely to fall or needs to be expanded. The aims of the service are ready availability and continuing responsibility wherever appropriate. The results indicated that most patients spent a relatively short time in hospital: 63 per cent of both men and women were resident for a total of less than three months during the five-year period. High bed use was often due to repeated admissions rather than to uninterrupted residence. Bed use by men now appears to have stabilized, whilst for women it is still rising. Over the first six years the bed complement was reduced by 40 per cent, despite an increase in referrals of over 40 per cent; the unit's style of work prevents newly admitted patients from accumulating in beds made available by deaths. In future, however, it appears that not only will patients who die be replaced by new female admissions but more beds will be needed for these admissions unless the criteria for admission are changed. The present bed use is just within the Government's recommended guidelines; local issues are considered in the light of national policy.

449. SHERR, V. T., ESKRIDGE, O. C. and LEWIS, S. **A mobile, mental-hospital-based team for geropsychiatric service in the community.** *Journal of the American Geriatrics Society*, New York, 1976, Aug., vol. 24, no. 8, pp. 362-365.

A mobile team of workers consisting of three psycho-geriatricians, three social workers, one liaison visiting nurse, two secretaries, one occupational therapy consultant

and one recreational consultant was established at Norristown State Hospital, Penn., to give personal and preventive psychiatric, medical, and social care to the elderly within the area served by the hospital. The aim of the team was to: (i) diagnose and treat the problem; (ii) resolve or prevent the impending crisis which led to the original referral to hospital; and (iii) introduce social and psychiatric safeguards for the future role of the patient in the community. The team's mobility has permitted flexible approaches to problem-saving at the person's own home. Over 8½ years the team has evaluated 1,438 people and acted in a consultant capacity to 77 nursing or retirement homes. The majority of patients were successfully treated within their homes; only 222 were admitted to hospital during that time. The team often discovered overlooked physical and social factors that have an important role in the patient's disturbed behaviour.

450. **A program for high school students in a facility for the retarded: the Fountain Valley High School Community Services Program Fountain Valley, California.** *Hospital and Community Psychiatry*, Washington, 1976, Oct., vol. 27, no. 10, pp. 721-723.

In 1971 Fountain Valley (Calif.) High School established a scheme at Fairview State Hospital, Costa Mesa, Calif., in which 28 students worked with blind, mentally handicapped patients. The scheme has been of great benefit to both the hospital and the high school, and there are now more than 160 students working in the training scheme each term in nine of the hospital's 10 treatment programmes. The scheme provides the hospital with students who are enthusiastic, trained and who attend on a daily basis, and provides the students with an education they cannot obtain in a regular classroom situation. The students are a valuable source of one-to-one help and increase the amount of personal care and attention received by each patient. Staff are also freed for other activities. Future plans include increasing the number of volunteers, vocational possibilities, and encouraging other state organizations to develop similar schemes.

451. MEREDITH, J. **Selecting optimal training programs in a hospital for the mentally retarded.** *Operations Research*, Baltimore, 1976, Sept./Oct., vol. 24, no. 5, pp. 899-915.

This paper describes the development and use of a quantitative model to assist in the selection of an optimal training programme for mentally handicapped children in a Californian state hospital. The model is a constrained version of R. A. Howard's Markov decision model. It is used to compare, on a benefit-less-cost measure of performance, five training programmes: standard care, intensive training, behaviour modification, school, and placement in foster homes. Tradeoffs between programmes are found in terms of net benefit and annual cost to the hospital. The model is found to be additionally useful in evaluating possible new programmes or modifications to existing ones where their expected benefits may be known.

452. BALLA, D. A. **Relationship of institution size to quality of care: a review of the literature.** *American Journal of Mental Deficiency*, Albany, N.Y., 1976, Sept., vol. 81, no. 2, pp. 117-124.

The existing literature on the relationship between size and quality of care in hospitals for the mentally handicapped in the United States is reviewed. Quality of care is

discussed in four areas: (i) method of care in residential hospitals; (ii) behaviour patterns of patients; (iii) discharge rates; and (iv) extent of parental and community involvement. Care has been found to be generally more adequate in smaller hospitals, although considerable variations in the quality of care have been reported among small community-based hospitals. The major argument in favour of small community hospitals for the mentally handicapped is that parents can have easy access to their children; central hospitals are isolated with little contact with the outside world. There is little evidence to suggest that the behaviour of patients varies in hospitals of different sizes, and none on discharge rates. More research is required on a larger data base to construct a social policy.

453. VERSTEGEN, M. C. G. Toetsing van kwaliteit en doelmatigheid van de swakzinnigenzorg. **(Evaluating the quality and efficiency of care of the mentally handicapped.)** *Ziekenhuis*, Utrecht, 1976, Dec. 15, vol. 6, no. 24, pp. 668-673.

The motive for evaluation is to provide optimal care for the mentally handicapped. Its aim is to assess the quality of work, to compare it with similar work elsewhere, to guarantee high standards or improvements and to make the most efficient use of available means. This paper defines the various concepts involved. Norms, defined as accepted standards to be aimed at, are further elaborated as having to be flexible, temporary and acceptable to those concerned, comparable with other criteria, and with a clear aim. Evaluation, defined as the process whereby care is measured against accepted norms, is seen as a form of registration and recording which should be adequately carried out. To achieve the most efficient use of evaluation, suggestions are made for: (i) the setting up of disciplinary working groups to work out and discuss codes of practice (intradisciplinary evaluation); (ii) the setting up of multidisciplinary working groups with members drawn from various disciplines to work out practical conditions (interdisciplinary evaluation); and (iii) those working groups to be set up on a national level.

SOCIAL MEDICINE

454. DUVALL, M. E. and COULTER, B. **Commitment leads to steadily growing home meals program.** *Hospitals*, Chicago, 1976, Aug. 1, vol. 50, no. 15, pp. 169-170, 172.

The Good Samaritan Medical Center, Zanesville, Ohio, serves 300,000 people over an eight-county area. The Center has developed the only non-government funded, multicounty, multistate, volunteer scheme providing hot midday meals at home for elderly or convalescent people, and for those requiring special diets who cannot provide nutritious meals themselves. The hospital sponsors and administers the system and by using volunteers and having the recipients pay a minimum price of $1.25 for each meal the centre is confident that Franciscan Community Meals (FCH) can be successfully operated without local, state or federal funds. Over 4,000 volunteers have been recruited; each volunteer attends an eight-hour training session before starting his route. A driver and an assistant cover one route (eight to 10 meals) five or six days a week. Food is mainly provided from hospitals and nursing homes, but 45 per cent of the meals are now provided from private facilities. Kitchens are inspected regularly to meet the official standards. Nobody is denied the service through inability to pay.

Food providers receive $1.10 per meal to cover the costs and the remaining 15 cents pay for the food containers. FCH works closely with the social services. Several counties have established a trial scheme of week-end meals for their clients. The development of FCH represents a double commitment from the hospital to the community and vice versa.

AUTHOR INDEX

Ahmed, M. B. 443
Anderson, L. R. 426
Anderson, O. W. 403
Andreini, A. 447
Arie, T. 448
Aukes, L. C. 405
Auld, R. 318, 319
Balla, D. A. 452
Benedetto, A. R. 424
Bennie, E. H. 442
Berlin, G. N. 309
Blaive, M. P. 322
Blanpain, J. E. 303
Bloch, R. G. 342
Bluglass, R. 440
Braden, F. M. 357
Breheny, J. E. 438
British Standards Institution 329
Britt, M. R. 391
Brown, H. J. 434
Bryan, L. 383
Buckley, R. D. 354
Carey, R. G. 331
Carlisle, J. M. 442
Chamberlain, M. A. 425
Chiswick, B. R. 364
Clasen, T. E. 415
Colebrook Cooling, W. 325
Coorens, J. M. 323
Coulter, B. 454
Dahlberg, L. 401
Davenport, H. T. 409
David, B. D. 380
Davies, S. E. 305
Deeson, A. F. L. 310
Del Bueno, D. J. 347
Delinière, M. 322
Denreczeni, P. 372
Duckett, S. J. 336
Dudley, H. A. F. 411
Dumas, M. B. 399
Duvall, M. E. 454
Eichholz, H. 408
Ellrich, M. 324
Elzinga, D. J. 309
Eriksen, K. R. 326
Eskridge, O. C. 449
Esogbue, A. O. 363
Farndale, W. A. J. 373
Fetter, R. B. 361
Firth, D. 425
Fitch, K. A. 387
Ford, C. W. 333
Foss, P. O. 429
Fredrickson, J. W. 358
Fritz, M. 383
Fuchs. V. R. 330
Gall, J. E. 366
Gärtner, U. 314
Gassner, C. B. 388
Geiger, K. 397
Gerson, L. W. 407
Gilderdale, S. 406
Gloger, H. 339
Gräser, W. 419
Great Britain. Department of Education and Science 431
Great Britain. Department of Health and Social Security 431
Great Britain. Welsh Office 431
Gregory, D. D. 360
Hannig, V. 375
Hardy, C. T. 358
Hart, R. J. 413
Hatherley, L. I. 438
Haug, J. O. 445
Hawkins, R. E. 366
Heu, R. 421
Hiergist, A. 320
Himsworth, R. L. 398
Holland, W. W. 406
Holliday, H. 337
Hughes, O. P. 407
Hulse, R. K. 417
International Labour Office 343
Johnson, C. E. 418
Johnson, H. 331
Johnson, R. M. 385
Jolley, D. J. 448
Jones, J. H. 414
Károlyi, G. 372
Keintz, R. M. 377
Keller, H. 420
Kerman, F. 331
Kernick, D. P. 305
Kohn, J. 315
Koltuv, M. 443
Kretschmar, C. G. 362
Krognos, G. 326
Kushner, J. 349
Larman, E. C. 373
Latimer, B. W. 359
Ledger, W. I. 388
Leggett, K. 385
Leholt, T. 446
Lewis, S. 449
Leyland, S. J. 432
Lidwell, O. M. 392
Liljedahl, A. 328
Linden, C. R. 369
Lindsay, C. M. 356
Luijten, J. J. 396
McCormick, T. R. 352
McGrath, B. J. 348
McLeod, D. C. 416
McProud, L. M. 380
Madsen, M. 326
Mainland, J. F. 411
Marshall, F. S. V. 413
Martin, S. 332
Maryland Hospital Education Institute 374
Meredith, J. 451
Miller, H. E. 344
Mills, R. E. 361
Morgan, M. K. 333
Müller, P. 314
Mullink, J. A. M. 307
Naylor, C. M. 355
Nickerson, R. J. 338
Nijhuis, H. 402
Norwood, D. D. 366
Nunn, C. 306
Nusynowitz, M. L. 424
O'Donnell, J. 381
Otten, J. 421
Paine, L. 308
Passoni, M. 334
Philpot, B. 321
Pierskalla, W. P. 344
Pigors, R. 422
Plouviez, M. 337
Post, G. E. 415
Pozen, M. W. 339
Pruvost, R. 335
Quaife, M. C. 347
Rabinowitz, M. 399
Raspe, H.-H. 340
Rath, G. J. 344
Renou, P. 428
Rentsch, I. 314
Resman, B. H. 416
Revelle, C. S. 309
Rindlisbacher, R. 386
Roberts, L. W. 381
Rosin, A. J. 433
Royal Australasian College of Surgeons 411
Russell, L. B. 304
Russell, S. 376
Scarf, C. G. 336
Schaberg, D. R. 389
Schöntube, E. 410
Schweizer, R. T. 393
Schwenn, P. 365
Sears, D. 318, 319
Seawright, L. C. 369
Seed, R. F. 412
Seidel, G. 378
Sherr, V. T. 449
Simpson, J. E. P. 436
Singh, A. J. 363
Singleton, V. 439
Skaggs, C. O. 414
Slotfeldt, M. H. 418
Smith, C. V. 385

Smith, J. P. 350
Stillman, R. M. 367
Stinebaugh, E. H. 381
Stoltens, G. 327
Straw, J. D. 424
Strilaeff, F. 341
Sumbrunn, B. 386
Sutcliffe, R. L. G. 434
Swansburg, R. C. 400
Thompson, J. D. 361
Todd, N. A. 442
Valinsky, D. 399
Valois, J. 371
Vandenschrik, J. 370
Verkasalo, E. 423
Verstegen, M. C. G. 453
Vogel, L. C. 430
Walkley, P. H. 404
Walldren, L. 368
Warner, D. M. 345
Wells, L. L. 394
Welsh, E. A. 412
Weltmann, A. J. 437
Wenzel, R. P. 390
Woodside, M. 444
World Health Organization. Regional Office for Europe 353
Wright, V. 425
Zálogh, S. 372
Zost, E. D. 313
Zschaege, I. 397
Zündel, G. J. 379

Addresses of publications referred to in this issue

JOURNALS—(*The price of a single issue is given where known*)

ASSA Journal, Sherwood House, Matlock, Derbyshire DE4 3LT, England.
Acta Hospitalia, Vital Decosterstraat 102, 3000-Louvain, Belgium. 150F
American Journal of Epidemiology, 615 North Wolfe St., Baltimore, Md., 21205, U.S.A.
American Journal of Hospital Pharmacy, 4630 Montgomery Ave., Washington, D.C. 20014, U.S.A. $2.50
American Journal of Mental Deficiency, 49 Sheridan Ave., Albany, N.Y. 12210, U.S.A. $8.00
American Journal of Nursing, 10 Columbus Circle, New York, N.Y. 10019, U.S.A. $1.00
American Journal of Obstetrics and Gynecology, 11830 Westline Industrial Drive, St. Louis, Mo. 63141, U.S.A. $3.50
American Journal of Surgery, 666 Fifth Avenue, New York, N.Y. 10019, U.S.A.
Anaesthesia, Blackwell Scientific Publications, Osney Mead, Oxford OX2 0EL, England. £2.50
Applied Economics, A.B.P., North Way, Andover, Hants, England.
Archives of Ophthalmology, 535 North Dearborn St., Chicago, Ill. 60610.
Australian and New Zealand Journal of Psychiatry, Maudsley House, 107 Rathdowne St., Carlton, Victoria 3053, Australia.
British Journal of Hospital Medicine, 23-29 Emerald St., London WC1N 3QJ.
British Journal of Psychiatry, Headley Bros. Ltd., Ashford, Kent TN24 8HH, England. £3.50
British Medical Journal, Tavistock Sq., London WC1H 9JR. £0.80
Canadian Journal of Public Health, 55 Parkdale Ave., Ottawa K1Y 1E5, Canada. $2.50
Dimensions in Health Service, 25 Imperial St., Toronto, Ont. M5P 1C1, Canada.
East African Medical Journal, Box 41632, Nairobi, Kenya.
Egészségügyi Gazdasági Szemle, Zichy Jeno u.4, Budapest V1, Hungary.
Environment and Planning, 207 Brondesbury Park, London NW2 5JN.
Exploration in Economic Research, 261 Madison Avenue, New York, N.Y. 10016, U.S.A.
Hôpital à Paris, 7 rue des Minimes, 75003 Paris, France. 12F
Hospital & Community Psychiatry, 1700 18th St. N.W., Washington, D.C. 20009, U.S.A. $2.00
Hospital Engineering, P.O. Box 8, Southgate House, Stevenage, Herts. SG1 1HQ, England. £1.50
Hospital Financial Management, 666 North Lake Shore Drive, Chicago, Ill. 60611, U.S.A. $1.75
Hospital and Health Services Review, 75 Portland Place, London W1N 4AN. £0.60
Hospital Pharmacy, J. B. Lippincott, East Washington Sq., Philadelphia, Pa. 19105, U.S.A. $2.00
Hospital Progress, 1438 South Grand Blvd., St. Louis, Mo. 63104, U.S.A. $2.00
Hospitals, 840 North Lake Shore Drive, Chicago, Ill. 60611, U.S.A. $1.00
International Journal of Health Services, 43 Central Drive, Farmingdale, N.Y. 11735, U.S.A.
Journal of the American Geriatrics Society, 10 Columbus Circle, New York, N.Y. 10019, U.S.A.
Journal of the American Medical Association, 535 N. Dearborn St., Chicago, Ill. 60610, U.S.A.
Journal of Economics and Business, Temple University, School of Business Administration, Philadelphia, Pa. 19122, U.S.A.
Journal of Infectious Diseases, 5801 Ellis Ave., Chicago, Ill. 60637, U.S.A.

Journal of Nuclear Medicine, 475 Park Ave. S., New York, N.Y. 10016, U.S.A. $4.50
Journal of Political Economy, 5750 Ellis Ave., Chicago, Ill. 60637, U.S.A.
Krankenhaus, Postfach 747, 7 Stuttgart 1, Western Germany. DM12.00
Krankenhaus Umschau, Postfach 1149, Oskar-von-Miller Strasse 5, 865 Kulmbach (Bayern), Western Germany.
Krankenhausarzt, Karl-Friedrich-Strasse 14-18, Postfach 1709, 75 Karlsruhe 1, Western Germany. DM3.00
Lancet, 7 Adam St., London WC2 6AD. £0.60
Landstingens Tidskrift, Gavlegatan 16, Box 6606, 113 84 Stockholm, Sweden. 5Kr
Medical Journal of Australia, P.O. Box 116, Glebe, N.S.W. 2037, Australia.
Millbank Memorial Fund Quarterly/Health and Society, Prodist, Room 502, 156 Fifth Avenue, New York, N.Y. 10010, U.S.A. $4.00
Modern Healthcare, 230 West Monroe St., Chicago, Ill. 60606, U.S.A.
New England Journal of Medicine, 10 Shattuck Street, Boston, Mass. 02115, U.S.A. and c/o Flarepath Printers Ltd., Old Parkbury Lane, Colney St., St. Albans, Herts. AL2 2ED, England.
Nursing Mirror, Surrey House, 1 Throwley Way, Sutton, Surrey SM1 4QQ, England. £0.15
Nursing Times, Macmillan Journals Ltd., Little Essex St., London WC2R 3LF. £0.15
Operations Research, 428 East Preston St., Baltimore, Md. 21202, U.S.A.
Ospedale, Corso Turati 46, 10128 Torino, Italy.
Physical Therapy, 49 Sheridan Ave., Albany, N.Y. 12219, U.S.A.
Practitioner, 43-45 Annandale St., Edinburgh EH7 4AT, Scotland. £1.00
Rheumatology and Rehabilitation, 8 Henrietta St., London EC2E 8QE.
Sairaala, Pihlajatie 7A3, 00270 Helsinki 27, Finland.
Santé Securité Sociale: Statistiques et Communautaires, Ministère de la Santé, Ministère du Travail, 14 Avenue Duquesne, 75005 Paris, France.
Social Science & Medicine, Headington Hill Hall, Oxford OX3 0BW, England.
Sygeplejersken, Vimmelskaftet 38, Postbox 1084, 1008, København K, Denmark.
Sykehuset, Askergt, 2, Oslo 4, Norway.
Techniques Hospitalières 17/19 rue Danton, 94270 Le Kremlin-Bicêtre, France. 25F
Technische Gids voor Ziekenhuis en Instelling, Tesselschadestraat 18-22, Amsterdam, Netherlands.
Tecnica Ospedaliera, via Moscova 46/9, 20121 Milano, Italy.
Veska, Postfach, Rain 32, 5001 Aarau, Switzerland.
Voeding- en Huishoudgids, Tesselschadestraat 18-22, Amsterdam, Netherlands.
World Hospitals, 126 Albert St., London NW1 7NF.
Yale Journal of Biology and Medicine, Academic Press, 111 Fifth Avenue, New York, N.Y. 10003, U.S.A.
Zeitschrift für die gesamte Hygiene und ihre Grenzgebiete, Rosenthalerstr. 28-31, DDR—102 Berlin, Germany.
Ziekenhuis, Oudlaan 4, Utrecht, Netherlands. fl.3.00

PUBLISHERS

American Hospital Association, 840 North Lake Shore Drive, Chicago, Ill. 60611, U.S.A.
British Standards Institution, 101 Pentonville Rd., London N1 9ND.
Churchill Livingstone, 15, 16 & 17 Teviot Place, Edinburgh EH1 2XX, Scotland, and 104 Gloucester Place, London W1H 4AE.
Combustion Engineering Association, Beaufort Chambers, 240b High St., Slough, Bucks.
Heath D.C., 125 Spring Lane, Lexington, Mass. 02173, U.S.A.
Her Majesty's Stationery Office, P.O. Box 569, London SE1 9NH.
International Labour Office, CH1211, Geneva 22, Switzerland.
Joint Unit for Planning Research, University College London and London School of Economics, Wates House, 22 Gordon St., London WC1H 0QB.
Mosby, 3207 Washington Blvd., Saint Louis, Mo. 63103, U.S.A.
Ravenswood Publications, 203 Croydon Rd, Beckenham, Kent, England.
University of New South Wales School of Health Administration, Box 1, PO, Kensington, N.S.W., Australia.
World Health Organisation, Regional Office for Europe, 8 Scherfigsvej, DK-2100 Copenhagen, Denmark.

Printed in England for Her Majesty's Stationery Office by Holmes & Sons (Printers) Ltd.
Dd. 290021 K11 2/77 9362 Andover, Hampshire.

HER MAJESTY'S STATIONERY OFFICE

Government Bookshops

49 High Holborn, London WC1V 6HB
13a Castle Street, Edinburgh EH2 3AR
41 The Hayes, Cardiff CF1 1JW
Brazennose Street, Manchester M60 8AS
Southey House, Wine Street, Bristol BS1 2BQ
258 Broad Street, Birmingham B1 2HE
80 Chichester Street, Belfast BT1 4JY

Government Publications are also available through booksellers

ISBN 0 11 722613 0